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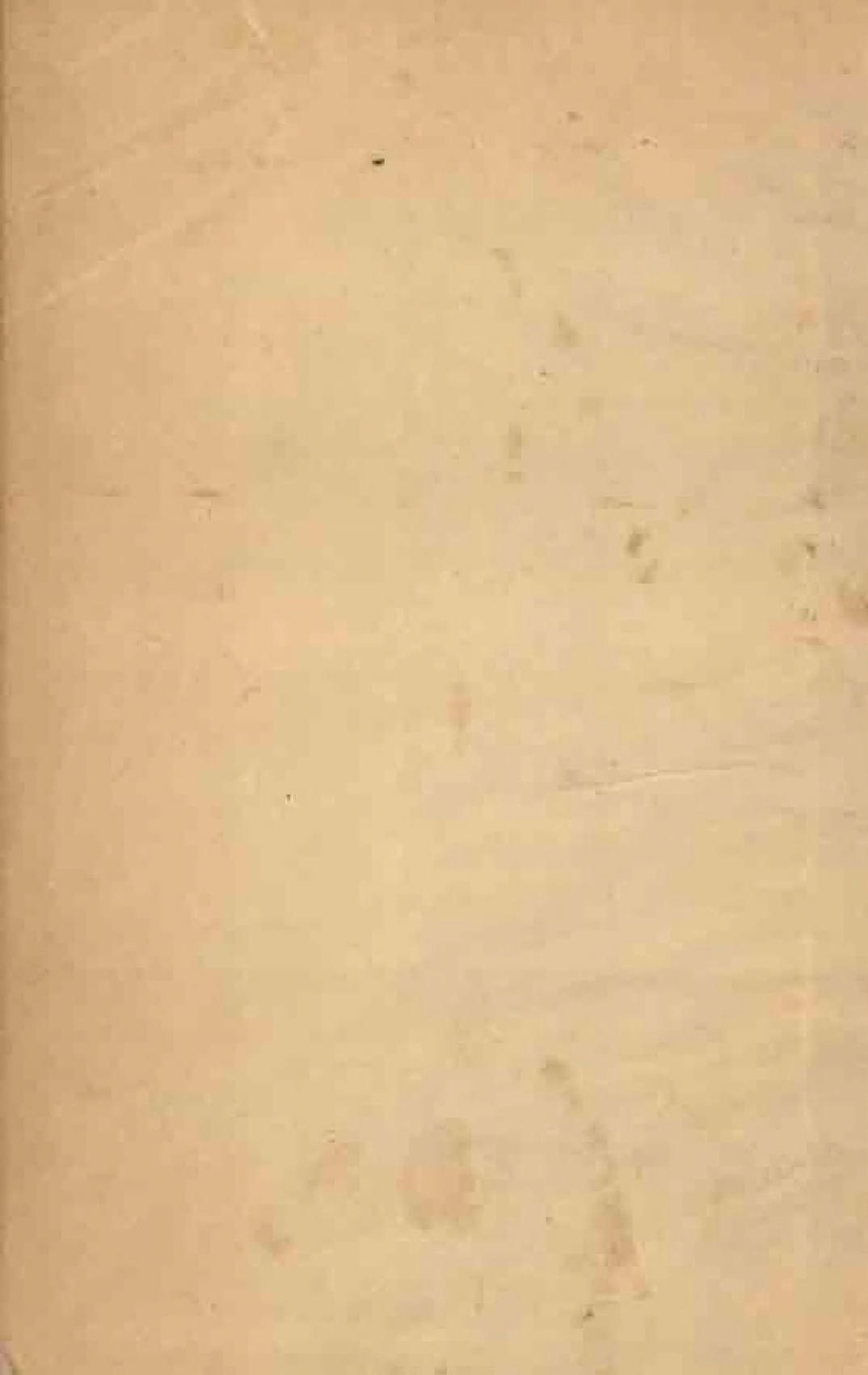
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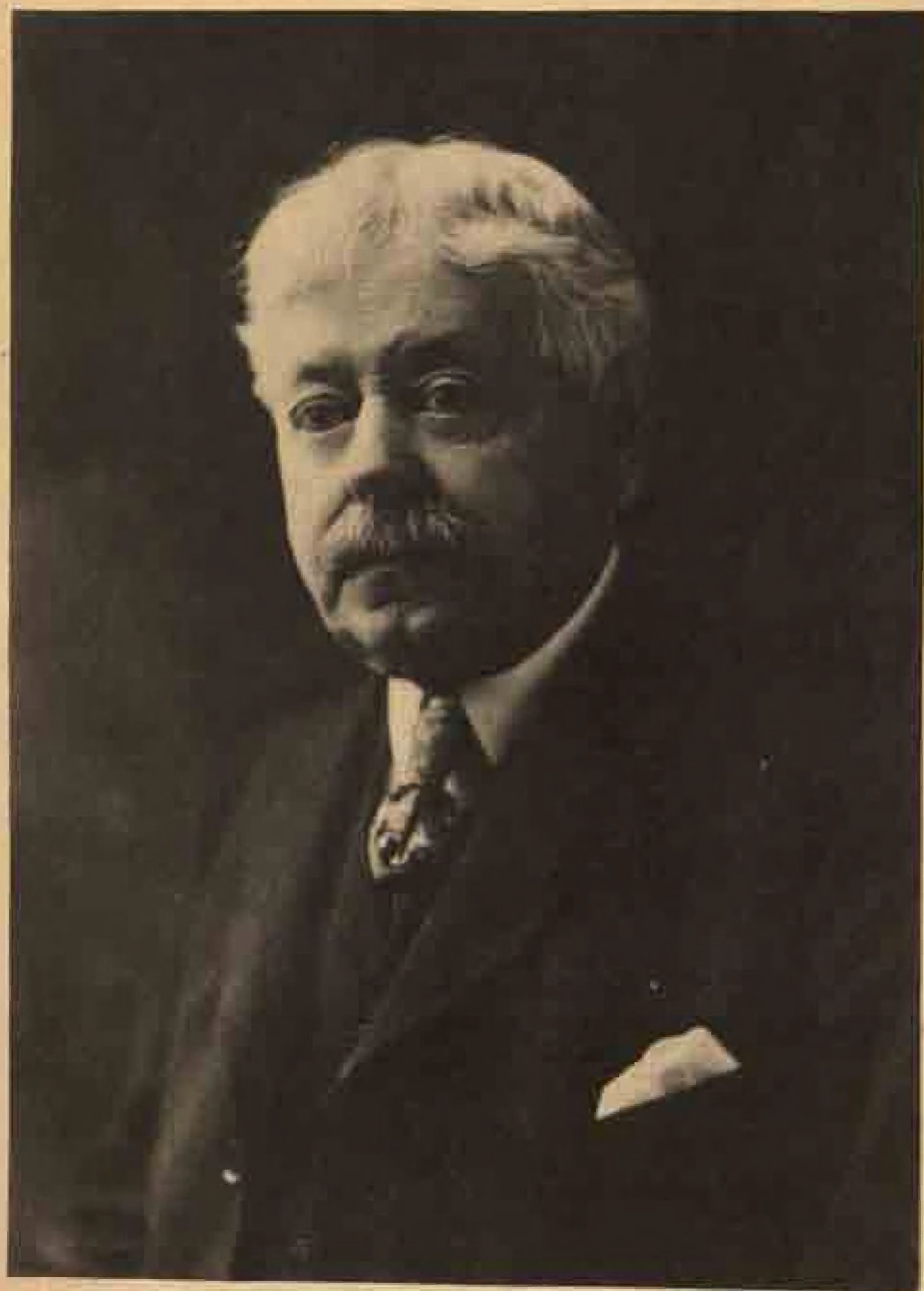












THE LATE FREDERICK J. V. SKIFF.
Director of the Museum from December 16, 1893, to February 24, 1921,
the date of his death.

FIELD MUSEUM OF NATURAL HISTORY.

PUBLICATION 208.

REPORT SERIES.

VOL. VI, No. 1.

ANNUAL REPORT OF THE
DIRECTOR

TO THE

BOARD OF TRUSTEES

FOR THE YEAR 1921.

32839



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CHICAGO, U. S. A.

January, 1922.



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BEQUESTS.

Bequests to Field Museum of Natural History may be made in securities, money, books or collections. For those desirous of making bequests to the Museum, the following form is suggested:

FORM OF REQUEST

I do hereby give and bequeath to "FIELD MUSEUM OF NATURAL HISTORY" of the City of Chicago, State of Illinois,

Cash Contributions made within the taxable year to Field Museum of Natural History to an amount not in excess of 1% of the taxpayer's net income are allowable as deductions in computing net income under the Revenue Law.



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*FREDERICK J. V. SKIFF.

*Deceased.

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Assistant Curators

EDMOND N. GUERET—*Osteology*
R. MAGDOON BARNES—*Oology*
ALFRED C. WEED—*Fishes*
EDMUND HELLER—*Mammals*
JOHN T. ZIMMER—*Birds*

Division of Taxidermy

JULIUS FRIESSER, *in charge*

DEPARTMENT OF THE N. W. HARRIS PUBLIC SCHOOL EXTENSION
S. C. SIMMS, *Curator*

THE LIBRARY

ELSIE LIPPINCOTT, *Librarian*
EMILY M. WILCOXSON, *Assistant Librarian*

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BENJ. BRIDGE

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U. A. DOBBS, *in charge*

SUPERINTENDENT OF MAINTENANCE

JOHN E. GLYNN

SECTION OF PHOTOGRAPHY

C. H. CARPENTER, *in charge*

CHIEF ENGINEER

W. H. CORNING

DECEASED 1921

FREDERICK J. V. SKIFF, *Director*

CHARLES B. COY, *Curator of Zoology*

EDWARD T. HARPER, *Assistant Curator of Cryptogamic Botany*

January 1, 1922

ANNUAL REPORT OF THE DIRECTOR

1921

To the Trustees of Field Museum of Natural History:

FREDERICK J. V. SKIFF

November 5, 1891 — February 24, 1921

Appointed Director December 16, 1893

Since the last issue of the Annual Report the Museum has sustained an irreparable loss in the death of its Director, Frederick J. V. Skiff, which took place suddenly at Chicago, February 24, 1921, after two days' illness. On the Monday preceding his death, Dr. Skiff attended the regular monthly meeting of the Board of Trustees, and assisted in the proceedings with his accustomed vigor and enthusiasm.

On such an occasion as this attention is invited more especially to the sterling character of Dr. Skiff, rather than to his achievements. The story of what he accomplished has been told. The memory of what he was is both uplifting and inspiring—the most loyal of friends, a lover of all good and beautiful things; a strenuous worker, a lively and entertaining talker, a patient and inspiring administrator, who infused his associates with his own zeal—he leaves in the hearts of all who knew him a bright and imperishable image, an ideal of faithful efficient service, combined with most amiable personal traits. And nothing in his life became him better than his last painful years. For sometime before his death he suffered from a distressing affliction which no remedy could arrest. His last years were lived in constant and sometimes almost unendurable physical agony, and in the knowledge that his silent fight could hardly be other than hopeless. And yet his courage, his faith in the virtue there is in life, his perfect confidence that all things work together for good, were unflinching. He labored so unceasingly and through consideration of others hid his suffering so carefully, that few suspected the ordeals of bodily pain through which he passed with a quiet indomitable courage that was a marvel to the few who knew the truth about his real condition. His interest in the many activities of the Museum and in the numerous educational and social projects of the Country was unabated. Greater fortitude could not have been displayed. No apparent sign warned his

associates of the close of his great and useful career, although the suddenness of the end was not altogether unforeseen by himself and those in his confidence.

When the history of Field Museum comes to be written, it cannot be doubted that the name of Frederick Skiff will be placed first among the pioneers. His modesty and self-effacement, his retiring and unselfish nature deprived him to some extent of popular applause by the public to whose service he gave his life, but among the immediate personnel for whom he labored and with whom he associated, he had a place few men find and fewer still have earned. Many, even those who had not the privilege of knowing Dr. Skiff intimately, will always remember his inspiring eloquence, the overpowering urge of his personality, and his faithful devotion to the Museum.

His more public work, especially in connection with the great expositions of the past quarter of a century, must be left to others to value and record. It may be recalled, however, that prior to his acceptance of the Directorship of the Museum, Dr. Skiff had occupied for two years the responsible post of Chief of the Department of Mines and Mining and Deputy Director General of the Chicago Exposition of 1893. Before coming to Chicago to enter into exposition and museum activities, Dr. Skiff for a number of years managed and edited the *Denver Tribune*. Associated with him in this work were the late Eugene Field, "Bill Nye," and O. H. Rothacker, authors and journalists. He was appointed Director-in-Chief of the United States Exhibits at the Paris Exposition in 1898-1901; Director of Exhibits of the St. Louis Exposition 1901-1905; was appointed by President Taft, United States Commissioner General to the Japanese Exposition, and in 1911 was appointed Director-in-Chief of the Panama-Pacific International Exposition at San Francisco. In recognition of his important achievements and the benefits to society accruing therefrom, Dr. Skiff had also received academic distinctions from many universities and learned institutions and decorations from practically all of the countries of the world.

I have the honor to present a report of the operations of the Museum for the year ending December 31, 1921:

The day appointed for the re-opening of the Museum was May 2, 1921. At this time and even before, the extensive collections, which had been transferred from the old building in Jackson Park, had been organized into a scientific and systematic arrangement and installed in the halls of the new building. Through active, not to say

strenuous effort on the part of all concerned everything was in readiness for the renewal of the work for which the Museum had been established. It had been decided by the Board of Trustees to hold no exercises in connection with the re-opening of the Museum, but invitations to an informal reception during the afternoon of May and were extended to a list of 10,000 individuals, which included prominent citizens; educators, army and navy officers and public officials. Approximately 8,000 of these invited guests accepted the invitation and expressions of general admiration for the building and its arrangement were heard on all sides. The following day the Museum was thrown open to the public and that the new building and new facilities which it provides have met with hearty approval is shown by the fact that at this time the average daily attendance is more than double that recorded at the old building in Jackson Park.

The physical conditions of the Institution at the date of this review show but a small part of the actual work performed since the occupancy of the New Building. The scientific work in connection with the reinstallation has been of a nature that is not apparent to the casual observer and is concealed, as a matter of fact, from even the more critical visitors. The work in the laboratories and the constant application of time and study to the tasks of identification, labeling and inventorying have pushed these essential features of Museum work distinctly forward. The vast amount of this labor suddenly devolving upon the Museum staff, as it did at the reopening of the Museum, would have dismayed those less earnest and confident. Thanks are due to the staff and to all classes of labor for the very excellent work accomplished. Those in the more responsible positions have had anxious and arduous times, but fortunately the Museum has men and women on whom it can depend and their loyal service is much appreciated. It would be here justice to mention many by name, but it would be injustice to omit others, so in fairness all should be included.

President Field, at the December meeting of the Board of Trustees, announced that he had decided to assume the entire deficit occurring in the Building Fund, towards which he has already contributed the sum of \$150,000.00. To this deficit Mr. Potter Palmer has also contributed during the year the sum of \$1,000.00.

At the same meeting of the Board, the President intimated that Captain Marshall Field had volunteered to contribute the sum of \$50,000.00 annually for a period of five years for the purpose of dispatching expeditions into the field, defraying the cost of new exhibition

cases and for the publication of manuscripts prepared by members of the staff. Captain Field has also contributed the sum of \$65,000.00 to liquidate the deficit in the General Fund for the year 1921.

The acquisitions and contributions received or announced during the year have been exceptionally numerous and valuable as will be seen from the list of accessions appended to the report. Mention should be made of the contribution of \$25,000.00 made by Mr. Arthur B. Jones, to defray the expense of an ethnological survey in Malaysia, particularly in the Malay Peninsula and the Dutch East Indies.

Upon learning that the Museum contemplated increasing its printing shop equipment, Mr. William V. Kelley generously presented the Institution with a new Miehle Cylinder Press, which is especially adaptable for printing the publications of the Museum.

Mr. Stanley Field presented to the Board of Trustees of the Museum an oil portrait of himself and also one of the late Director, Doctor Skiff. Mrs. Richard T. Crane, Jr., presented an oil portrait of the late Mr. Harlow N. Higinbotham, and Mr. Edward E. Ayer presented an oil portrait of himself.

Miss Helen C. Gunsaulus has presented to the Museum, in memory of her father, Dr. Frank W. Gunsaulus, her entire collection of Japanese Surimono. The Board of Trustees has dedicated a hall in honor of Dr. Frank W. Gunsaulus, in which the Japanese Surimono are to be exhibited.

President Field has assumed the entire expense of furnishing the Trustees Room in the new building.

Mrs. Frederick J. V. Skiff presented a bronze bust of the late Dr. Skiff, which has been installed in "Frederick J. V. Skiff Hall" in the Department of Geology.

Mr. William Wrigley, Jr., contributed the sum of \$3,500.00 towards the purchase of 29 Buddhistic sculptures.

Mr. Edward E. Ayer continued his contributions of books for the Edward E. Ayer Ornithological Library, details of which appear elsewhere in this report.

President Field presented to the Department of Zoology three animal pieces in bronze, sculptured by Carl E. Akeley.

The Museum has received as a gift a mimeographing machine from Mr. A. B. Dick.

During the year the vacancies existing in the membership of the Board of Trustees were filled by the election of Mr. Richard T. Crane, Jr., Mr. James Simpson, Mr. Harry E. Byram and Mr. Ernest R. Graham.

Colonel Albert A. Sprague was elected Third Vice-President, the Board of Trustees having created this office by an amendment to Section 1, Article IV of the By-Laws.

Mr. D. C. Davies was elected Secretary of the Board to fill the vacancy existing, and Mr. George Manierre was elected Assistant Secretary.

Mrs. Edward E. Ayer was chosen an Honorary Member of the Museum, in view of the eminent service she has rendered to science.

The Life Members of the Institution were increased by the election of Mr. Frederic W. Upham, Mr. Francis C. Farwell and Mr. Colin C. H. Fyffe. Mr. Marvin B. Pool was elected an Associate Member of the Museum.

At a meeting of the Board of Trustees, held December 19, 1921, the present incumbent was appointed Director of the Museum to succeed the late Doctor Frederick J. V. Skiff.

At a special meeting of the Board, held March 1, 1921, Benjamin Bridge was appointed Auditor, and at the regular meeting of the Board in April, Henry F. Ditzel was appointed Recorder.

The Museum sustained a signal loss in the death of Charles B. Cory, Curator of Zoölogy. Prof. Cory had been in the service of the Museum for twenty-eight years, during which period his conscientious, untiring devotion to his work and his cheerful presence had deeply impressed all his associates. Prof. Cory was first and foremost an ornithologist, and this was attributable to no lack of sympathy with the larger field, but because he recognized that the larger field could not be successfully covered by one man. His work on "The Birds of the Americas," in preparation at the time of his death, furnishes abundant evidence of his remarkable knowledge of the literature of his subject and his ability to use it to the greatest advantage. The book is an elaborate catalogue and the special attributes essential for the production of such a work Prof. Cory possessed in a marked degree.

To complete and edit this work the Museum has been enabled, through the generosity of Mr. Charles R. Crane, to secure the services of Dr. C. E. Hellmayr, one of the leading and best known European ornithologists. Dr. Hellmayr is at present affiliated with the University of Munich and will probably arrive in Chicago early in the summer of 1922 prepared to commence his duties. As Dr. Hellmayr's ornithological labors have been particularly directed to South America and as he is familiar also with the important collections of birds in Europe, the Museum is specially fortunate in having obtained his consent to undertake the completion of this monumental work.

During the year Alfred C. Weed was appointed Assistant Curator of Fishes and Ralph Linton Assistant Curator of North American Ethnology. Late in the year Wilfred H. Osgood was appointed Curator of Zoölogy, to succeed the late Charles B. Cory, and William J. Gerhard was appointed Associate Curator of Insects. In the Department of Geology, Henry W. Nichols was appointed Associate Curator of Geology and Elmer S. Riggs Associate Curator of Paleontology. The appointment of J. Francis Macbride as Assistant Curator in the Department of Botany is also announced, the appointment taking effect January 1, 1922.

Upon the recommendation of the Executive Committee, Hall No. 3 has been dedicated to Mary D. Sturges, and Hall No. 13 has been dedicated to George M. Pullman, two of the early benefactors of the Museum.

The sudden death of Doctor Frank Wakeley Gunsaulus, one of the original Incorporators and Trustees of the Museum and a Patron of the Institution, occurred during the year. Dr. Gunsaulus took an active interest in the foundation of the Museum and from time to time had made many valuable gifts to the Institution. The Board of Trustees at a meeting May 16, 1921, adopted the following testimonial:

"We Fellow Members of the Board of Trustees of Field Museum of Natural History and associates and friends of the late Frank Wakeley Gunsaulus desire to express our appreciation of his life and service:

We recognize:

That in his death the World has lost a man of high moral worth, unusual breadth of intellect, profound human sympathy, unswerving loyalty to duty and unfailing devotion to his family and friends.

That the Nation has been bereft of a patriotic, public-spirited and loyal citizen, and American Science and Art of a distinguished investigator and adviser, and an earnest and efficient administrator.

That Field Museum of Natural History and all Institutions organized for the promotion of knowledge have lost a faithful and willing co-worker.

We mourn his loss not only on account of his high intellectual attainments and qualities, but also because he was a man of broad sympathy and tender heart, of upright character and deep spiritual discernment.

We extend to the members of his bereaved family in this hour of their affliction our sincere sympathy, and in token thereof have ordered a copy of this expression of our appreciation transmitted to them, and have likewise ordered it spread upon the records of Field



THE LATE FRANK W. GUNSAULUS.
An Incorporator and Trustee of the Museum.



Museum of Natural History, of which Institution our late associate was not only a devoted Trustee but also one of the original incorporators."

As important aids to the facilities for installation and maintenance, there have been added to the Carpenter Shop machinery a bench planer, variety saw and hollow chisel morticer, together with the necessary motor equipment. During the year the shop made and installed 1,606 lineal feet of book shelving of various depths, 11,676 square feet of storage shelving, racks for 1,450 trays, 28 work benches of special designs with wood or soapstone top, fitted with drawers of various dimensions, cupboards and pigeon holes. Racks for 437 storage cans, three book stacks for the General Library and other miscellaneous work has also been executed for the working areas on third floor. The toning room and stock room in the Section of Photography have been furnished with lead lined tanks, cupboards, work benches, shelving and window shutters.

Considerable new apparatus has also been added to the Section of Photography, which will undoubtedly increase the efficiency of the work and enable the section to produce better and more accurate results. This section is now producing the picture postal cards which are sold to visitors.

Extensive additions have also been made to the equipment and facilities in the Section of Printing. The space on the fourth floor, formerly occupied by this section, was not considered suitable to accommodate the additional work of printing the publications of the Museum, all of which work, it has been decided, will be performed in the Museum in the future. The section was therefore transferred to a large, well-lighted room on the third floor, near which space for a commodious stock-room was provided. To carry the heavy load of the Miehle Cylinder Press and Automatic Paper Cutter a room in the south end of the ground floor was selected for this portion of the new equipment. In addition to the cylinder press and paper cutter, there have been installed in the printing shop a book sewing machine, stitcher, and motors for all machinery, including two motors for the platen presses.

Owing to constant demand from visitors, a restaurant has been opened on the ground floor and the patronage thus far bestowed seems to justify this convenience.

INCOME AND MAINTENANCE.—The budget approved by the Board of Trustees authorized the sum of \$290,786.00 for the maintenance of the Museum for the year 1921. The actual income received during

that period amounted to \$215,123.00. The actual expenditures amounted to \$280,123.00, leaving a deficit of \$65,000.00, which amount, as mentioned elsewhere in this report, was contributed by Captain Marshall Field. As a matter of record it may be stated that part of the amount disbursed for maintenance included the expense of new construction work on the third floor, where a certain amount of labor was required for the readaptation of the area to render it more fit for the uses to which it is now devoted.

PUBLICATIONS.—During the year two publications were issued, details of which follow:

- Pub. 206—Report Series, Vol. V, No. 6. Annual Report of the Director for the year 1920. 75 pages, 11 halftones, edition 1,500.
- Pub. 207—Zoological Series, Vol. XIV, No. 1. A Monographic Study of the American Marsupial, *Caenolestes*. By Wilfred H. Osgood. With a Description of the Brain of *Caenolestes*. By C. Judson Herrick. May, 1921. 162 pages, 1 map, 22 halftones, edition 750.

THE LIBRARY.—Many valuable and interesting works have been received during the year by gift, exchange and purchase and several of these warrant special mention. President Field presented eleven volumes and eleven portfolios of the monumental work on the North American Indian by Edward S. Curtis and Frederick W. Hodge, to be completed in twenty volumes. In addition to the ninety-two volumes of ornithological works purchased during the year for the Edward E. Ayer Ornithological Library, Mr. Ayer presented the Clarke Piscatorial Library of 1,640 volumes, which is a beautifully bound collection made by Robert Clarke of Cincinnati previous to 1892. It contains eighteen original editions of Izaak Walton's Complete Angler and a number of works dating back to the fifteenth and sixteenth centuries. A general atlas, dated Edinburgh, 1817, of considerable historical interest, was presented by Director Davies. From the Carnegie Institution of Washington, one hundred and seventy-eight publications were received and the library was made a repository for all future publications pertinent to the work of the Museum. Two hundred and fifty books and pamphlets, with a number of duplicates, were received with the E. T. and S. A. Harper mycological collection. Early in the year the Smithsonian Institution resumed the transmission of publications to practically all of the international exchange bureaus and efforts were made to obtain the publications held back during the





THE LATE CHARLES B. CORY.
Curator of Zoölogy.

was for lack of transportation. These have been coming in steadily, but still further efforts will have to be made to secure the numbers that were issued in limited editions. Exchanges were received from six hundred and forty-two institutions and individuals. Publications from all sources reached a total of 3,647 books and pamphlets, a considerable increase over the receipts of any of the past four years. The books and pamphlets total 77,471. Purchases of books and periodicals were limited for the most part to the immediate needs of the staff. The cost of binding is gradually being lowered and two hundred and seventy books were bound. There have been written and inserted in the catalogues 11,600 cards. Early in the year the books of the general library were cleaned, restored to their classification and shelved in rooms at the southeast end of the building. Space has now been permanently assigned for the library on the third floor.

DEPARTMENTAL CATALOGUING, INVENTORING AND LABELING.—During the year the work of cataloguing in the Department of Anthropology has progressed as the new accessions were acquired. The total number of catalogue cards prepared amounts to 983, which includes the Japanese Surimono presented by Miss Helen C. Gunsaulus. These cards are distributed over the single divisions as follows: North American Ethnology 468; Southwest, Mexican and South American Archaeology 21; Melanesian and African Ethnology 99; and Ethnology of China, India and Japan 395, and have been entered in the inventory books of the Department which now number 38. The number of annual accessions amounts to thirty-nine, twenty-eight of which have been entered. The total number of catalogue cards entered from the opening of the first volume amounts to 156,177. The Department has been supplied with a total of 4,984 printed labels. These are distributed over the divisions as follows: Stanley Field Hall, 315; Eskimo, Northwest Coast, etc., 854; Plains Indians, 1331; Indians of California, 96; South America, 1,038; Melanesia, 409; China, 220; Tibet, 6; Korea, 215; Formosa, 77; Japan, 227; India, 100; and Higinbotham hall, 96. A total of 458 label cards was added to the label file and 156 prints were placed in the photographic albums.

All newly accessioned specimens in the Department of Botany have been catalogued as fast as organized. A total of 14,058 entries has been made in the fifty-eight catalogue volumes, bringing the total number of catalogued specimens up to 496,367. Augmentation of the various card indexes during the past year has been necessarily slight, due to the preponderance of other work. Additional cards have been inserted as follows:

| | No. of Cards | |
|---------------------------------------|----------------|---------|
| | Augmented 1921 | Total |
| Index to Botanical Species | 4,870 | 161,488 |
| Index to Common Names | 914 | 21,380 |
| Index to Yucatan Plants | 89 | 6,496 |
| Index to Euphorbiac | 15 | 4,247 |
| Index to Department Labels | 200 | 3,405 |
| Index to Geographic Localities | 42 | 2,800 |
| Index to Collectors | 280 | 10,144 |
| Index to Botanical Titles ..... | .... | 1,373 |
| Index to Department Library ..... | .... | 8,800 |
| Index to Illinois Flora ..... | .... | 910 |
| Index to Hand Specimens of Wood ..... | .... | 2,446 |
| Index to Installation ..... | .... | 595 |
| Index to Photographs ..... | .... | 600 |

Although a large number of accessions has been received during the year by the Department of Geology, it has been possible to catalogue all specimens as soon as received. The total number of new entries made during the year is 4,046, the largest number of these, 3,213, being in invertebrate paleontology, due chiefly to additions received from the Dyer collection. In the economic division 482 new entries were made, and to the systematic mineral catalogue 271 numbers were added. More than 2,000 labels were written, printed and installed during the year in an endeavor to have all exhibited specimens uniformly labeled. Some of these labels are reprints on black cardboard of former buff labels, but the larger number relate to new specimens or are modifications in size or in wording, or both, of previous labels. In all labeling every endeavor was made to secure complete accuracy before printing. About forty of the labels were descriptive and of considerable length. Labels for some of the relief maps, for example, comprise between 2,000 and 2,500 words, while that for historic diamonds consists of about 3,200 words. In choosing type for the labels, as large sizes as were deemed allowable without increasing too greatly the bulk of the label were employed in order to facilitate reading. The entire series of systematic labels for vertebrate paleontology was revised or rewritten. New labels of from 300 to 500 words were written for the Asphaltum Beds fossils, Minooka Mastodons, Teeth of the Mastodon and the Horse and Titanotheres Families. Of the new labels of smaller size, 710 were for exhibits of ores, salts, and abrasives; 252 for the petroleum, coals, clays, soils and cements; 216 for the paleontological collections; 202 for Stanley Field Hall, and the remainder for miscellaneous specimens. To the Departmental photograph albums twenty-

eight prints have been added, making a total number of 2,939 prints in these albums.

The reference collections in the Department of Zoology remained inaccessible during most of the year, and cataloguing, therefore, was impossible. The total number of entries made was 326, distributed as follows: Mammals, 5; Birds, 49; Eggs, 1; Fishes, 39; Reptiles and Batrachians, 226; Invertebrates, 6. Record cards written during the year number 490, principally those of an index to the systematic exhibit of birds. Very little labeling of specimens in the reference collections has been done; but a very large number of new exhibition labels were written and printed. These included a few for the mammals, a large number for the birds, a complete series for the habitat groups, for all the fishes and reptiles and for a large number of shells.

The following shows the work performed on catalogues and the inventorying accomplished:

| | Number of Record Books | Total No. of entries to Dec. 31, 1921 | Entries during 1921 | Total No. of cards written |
|----------------------------------|---------------------------|--|---------------------------|----------------------------------|
| Department of Anthropology . . . | 38 | 156,177 | 983 | 156,177 |
| Department of Botany | 58 | 476,060 | 14,858 | 224,764 |
| Department of Geology | 22 | 145,518 | 4,046 | 8,456 |
| Department of Zoology | 40 | 101,631 | 326 | 34,806 |
| The Library | 14 | 125,000 | 7,394 | 205,316 |
| Section of Photography | 20 | 123,720 | 2,481 | ..... |

ACCESSIONS.—Through the generosity of Mr. Martin A. Ryerson and Mr. Homer E. Sargent, the Department of Anthropology is enabled to list, among its important acquisitions of the year, a collection of eighteen Mexican serapes gathered by Mr. Herbert J. Browne during a long sojourn in Mexico. The serape is made from two rectangular blankets of particularly fine texture and quality, sewn together lengthwise to form a square and having a short slit in the center through which the wearer may slip his head, the whole being worn over the shoulders in the same manner as the rubber poncho. The making of these blankets originated in Mexico shortly after the Spanish conquest and rapidly became a jealously guarded institution which flourished in certain parts of the country until 1850, a date which marks the beginning of a decline in that industry which proved even more rapid than the ascendancy. The exponents of the old art are now extinct, and while ordinary specimens are manufactured today in various sections of the country, the fine textiles with their brilliant colorings and exquisite patterns are rapidly disappearing, as

have already the secrets of their manufacture. The present collection consists of representatives of all the important types known in Mexico; eight from Saltillo, five from San Miguel, and one each from Guadalajara, Senora, Chihuahua, Puebla, and Zacatecas. Of these, those from Saltillo and San Miguel are the most beautiful as well as the most valuable; for these two cities have the distinction of being the best known seats of serape manufacture. The general Saltillo pattern shows a medallion consisting of concentric diamonds in various colors upon an all-over design in stripes, the motives being minute geometric patterns skillfully interlocked in rich and permanent colors. Of the Saltillo serapes, the one from the Obregon Hacienda, which is authenticated as having been woven about 1775 by a weaver from Saltillo who consumed two years at the Hacienda spinning and dyeing the yarn and weaving the blanket, is of particular interest. The tomato pink and Nile green colors of this blanket are exceptionally rare and add greatly to its value; for the secret of their manufacture, after having been handed down only a few generations, died out. The San Miguel blankets have a characteristic rosette instead of diamond in the center. This collection, together with another serape from Saltillo of exquisite design and coloring which was obtained by purchase, is exhibited in Case 1 of Hall 8. Mr. Edward E. Ayer presented a valuable Navaho blanket, which is being used for exhibition in the case showing Indian blankets in Stanley Field Hall, an Eskimo snow-beater carved from walrus-ivory and engraved with hunting and whaling scenes, and a Sioux huckskin gun-case heavily beaded. An addition of 215 baskets from different North American Indian tribes was made to the already large collection that has been presented by Mr. Homer E. Sargent. A complete series of reproductions of men of prehistoric races was secured from Professor J. H. McGregor, Department of Zoology, Columbia University, New York. These consist in the main of busts of the Pithecanthropus, Neanderthal, Cro-Magnon and Chapelle-aux-Saints men, as well as casts of restored skulls and jaws, all of which will be utilized to good advantage in the new hall planned for an exhibition of physical anthropology. A very fine and interesting piece of tapa cloth from Suva in the Fiji Islands was donated by Mr. and Mrs. Robert B. Dickinson of Chicago. Mrs. Ralph S. Greenlee of Chicago presented an accurate and beautiful model of the famous Taj Mahal at Agra, India, which was immediately placed on exhibition in Hall 32. A collection of ninety-seven objects gathered by Mr. Barbour Lathrop of Chicago was

presented by him. The collection consists of objects coming chiefly from Java, Celebes, Timor Laut, and Dutch New Guinea, with a few pieces from Bahber, Dammer, Letti and other small islands of that region. A large Korean cabinet with excellent brass fittings and a large number of knives, krises, spears, bows and arrows, bark garments and ornaments of shell and ivory are among the objects in the collection. Two of the Javanese krises, the blades of which are finely marked with inlaid silver and the handles surmounted by full figures in brass representing Hindu deities and studded with precious stones and beads, are worthy of special recognition. An exceptionally fine feast bowl of painted lacquer from Burma was received from Mr. Frederick R. Babcock of Wheaton, Illinois. This bowl is decorated all around with miniature paintings of exquisite quality, all of them representing scenes from the Indian epic poem, the Ramayana, and explained in Burmese legends. Mr. William J. Chalmers gave an excellent cloisonné-enamel jar from China which is remarkable because of its harmonious design and coloring, and highly prized because it was made in the latter part of the fifteenth century. A miscellaneous collection of eighty objects gathered on his travels in the Orient was received as a gift from Mr. Robert H. Fleming of Chicago. It is particularly rich in swords, daggers, and other weapons from China, Japan, India, Turkey, Spain, and Mexico. Of exceptional interest are two batiks from Java and a remarkable, large embroidered hanging from China, fifteen feet in length and nine and one-half feet in width. The latter bears a lengthy Chinese inscription from which it is ascertained that this embroidered picture was bestowed upon a certain Mr. Hu in 1863 in commemoration of his seventieth birthday by the prefect of Lin-kiang in Kiang-si Province. Especially opportune are twelve Japanese swords and six sword-guards which will make more complete the exhibition of Japanese swords and their fittings now in the process of installation. There are examples of the various types of swords used on different occasions, such as the ornamental sword for parade purposes, the fighting sword, the small sword, the dagger, the small dagger for women, and the slung sword. An excellent collection of Japanese Surimono was presented by Miss Helen C. Gonsaulus in memory of her father, Dr. Frank Wakeley Gonsaulus, former trustee. Surimono are color print cards of greeting which are produced for special occasions such as New Year, birthdays, and other festival days. The great majority are prepared for private distribution only, and it is except on rare occasions that any are placed on public sale. They far

excel the common prints; for, although they are produced by the same artists and in much the same manner, they are further enriched with elaborate embossing or gaufrage and the use of metal dusts: gold, silver, and copper. Poema, which bear an inward relation to the subject pictured, appear on the cards. The collection presented is one of the very few to be found in America, and consists of 360 Surimono made between 1780 and 1850. To the student of ethnology these prints render an invaluable service, for, brought together with excellent discrimination and a keen appreciation of the value and beauty of this avenue of approach to a study of the Japanese nation, they show with a wealth of detail the customs, costume and popular traditions of that nation. Every step of the important New Year's celebration has been delineated; games, festivals, intimate glimpses into the household, and scenes of old court-life are pictured in delicate detail; incidents taken from history, folk-lore, and classical drama, have been the inspiration of the artists quite as frequently as the flowering cherry, the first song of the nightingale, or the snowy peak of Mount Fuji. Owing to their fascinating subject-matter and their artistic merits, these prints make a ready appeal to every one, and will contribute their share to a better understanding of Japan. A further interesting addition was made to the collections of Japanese ethnology when three full costumes for women, typical examples of apparel worn by the military (Samurai) class, were purchased from Miss Michi Sato of Tokyo. The three costumes are: the winter ceremonial robe, the summer ceremonial robe, and the costume that is worn on the street. The winter robe is of heavy blue Canton crepe with the family crest printed in white, and is embroidered with small asters. The sash worn with this costume is a singular acquisition in itself, as it is made of five yards of heavy brown brocade and is adorned with a bamboo, wistaria and pheasant design in soft-colored and gold threads. The summer dress is also an excellent example of the Japanese costume. It is of blue silk, screen weave with embroidered lilies, and is worn with a blue and white sash which has a wave design in silver thread. The street costume is of striped crepe in two shades of blue, and has a brocaded sash. These three costumes, together with a dress worn at a wedding feast, the latter being of quite a different type from the others, and which was donated to the Museum by Miss Helen Wilkins, will combine to illustrate adequately the costume of Japanese women of the Samurai class. They will be exhibited in a realistic manner on life-size figures with a facial cast taken of Miss Sato and with correct hair-dressings. Mr.



HALL OF MINERALOGY.

This hall contains the systematic mineral collection, the collection of meteorites and a part of the collection of structural geology.

Gilbert Grosvenor, editor of the National Geographic Magazine, presented six copies of a new map of Eastern Asia and six copies of a new map of South America, which will be utilized for exhibition purposes in the halls devoted to those subjects. The collection of photographs was greatly enriched by an interesting series of a hundred photographs taken by Mr. L. Winternitz of Chicago among the Seminoles of Florida and in India, Burma, and other oriental countries, and which he presented to the Museum.

Among the notable collections received by the Department of Botany during the past year is the balance of the Harper Herbarium, presented to the Museum by the late Dr. Edward T. Harper and Susan A. Harper. A well lighted room 21x63 ft. has been assigned for its organization and installation. This herbarium consists of about 40,000 specimens, chiefly fungi; 6,000 photographs of fungi; a number of published exsiccata, and works of reference; and a mass of data and manuscript pertaining to the collections. A Preparator has been appointed to organize the material for cataloguing, and to date 6,585 specimens have been catalogued. The exsiccata include, among others: Fungi Selecti and Myxomycetes—O. Jaap, (700 specimens); New York Fungi—Shear, (331 specimens); Fungi Selecti—Torrend, (400 specimens); North American Fungi—Ellis and Everhart, (4,000 specimens); Microtheca Brasilensis—Ule, (2,000 specimens); Lichenes Boreali-Americani—Cummings, Williams and Seymour, (300 specimens); Uredineæ—Arthur and Holway, (200 specimens); Central American Fungi—C. L. Smith, (224 specimens); Economic Fungi—Seymour and Earle, (661 specimens); Phycotheca Bor.—American—Collins, Holden and Setchell, (2,425 specimens); Fungi Europei—Rabenhorst—Winter; Fungi Columbiani—Bartholomew, (5,324 specimens). Other important collections received during the year are: the Nuttall, the Knopf and the Millsbaugh Santa Catalina plants (1,960); the Heller California and Oregon plants (517); Britton and Cowell Cuban plants (183); Britton, Britton and Hazen, Trinidad plants (148); Buchtien Bolivian plants (472); and the Maxon and Killip Jamaican collections (1,276). The regional distribution of fully organized material is shown in the following table. The tabulation includes only such areas as have been augmented in 1921, and in no wise represents the entire herbarium.

| Locality | Added this Year | Total in Herbarium | Locality | Added this Year | Total in Herbarium |
|-----------------------|-----------------|--------------------|-----------------------|-----------------|--------------------|
| NORTH AMERICA | | | Alberta | 5 | 1,278 |
| Alaska | 6 | 130 | British Columbia..... | 15 | 1,301 |
| Baranoff Island | 1 | 35 | New Brunswick..... | 3 | 791 |

| Locality | Added this Year | Total Hec- tariens | Locality | Added this Year | Total Hec- tariens |
|----------------------------|-----------------------|--------------------------|-------------------------|-----------------------|--------------------------|
| NORTH AMERICA: | | | Wisconsin | 214 | 3,280 |
| Newfoundland | 16 | 722 | Wyoming | 123 | 1,701 |
| Nova Scotia | 29 | 439 | BAHAMA: | | |
| Ontario | 699 | 2,401 | Frozen Cay | 1 | 26 |
| Quebec | 5 | 1,151 | WEST INDIES: | | |
| UNITED STATES: | | | Cuba | 205 | 11,174 |
| Alabama | 75 | 1,577 | Isle of Pines | 2 | 1,268 |
| Arizona | 3 | 8,224 | Dominica | 1 | 60 |
| Arkansas | 124 | 585 | Jamaica | 1,337 | 9,012 |
| California | 323 | 26,450 | Porto Rico | 7 | 4,739 |
| San Clemente Island | 4 | 3 | Tobago | 54 | 883 |
| San Nicholas Island | 2 | 2 | Tortola | 40 | 70 |
| Santa Catalina | | | Virgin Gorda | 1 | 6 |
| Island | 2,540 | 2,923 | MEXICO | | |
| Santa Cruz Island | 2 | 73 | Coronado Islands | 12 | 20 |
| Carolina, North | 45 | 4,799 | Magdalena Island | 1 | 34 |
| Carolina, South | 12 | 1,115 | CENTRAL AMERICA: | | |
| Colorado | 358 | 12,943 | Honduras | 3 | 276 |
| Connecticut | 59 | 744 | Nicaragua | 147 | 239 |
| Dakota, North | 13 | 664 | SOUTH AMERICA: | | |
| Dakota, South | 34 | 1,883 | Argentina | 5 | 1,373 |
| Delaware | 37 | 1,375 | Bolivia | 472 | 4,396 |
| District of Columbia | 23 | 2,735 | Brazil | 127 | 721 |
| Florida | 64 | 20,469 | Chile | 4 | 299 |
| Georgia | 11 | 4,011 | Colombia | 33 | 2,971 |
| Idaho | 32 | 3,687 | Trinidad, Island | 140 | 643 |
| Illinois | 274 | 28,736 | Uruguay | 2 | 170 |
| Indiana | 69 | 7,012 | Venezuela | 2 | 710 |
| Iowa | 109 | 1,942 | Curacao | 1 | 101 |
| Kansas | 755 | 1,366 | EUROPE: | | |
| Kentucky | 24 | 1,397 | Austria-Hungary | 130 | 7,058 |
| Louisiana | 57 | 1,395 | Belgium | 54 | 367 |
| Maine | 19 | 1,376 | Denmark | 2 | 383 |
| Maryland | 72 | 1,729 | England | 8 | 2,548 |
| Massachusetts | 209 | 5,666 | Finland | 60 | 120 |
| Michigan | 54 | 3,667 | France | 35 | 8,410 |
| Isle Royal | 9 | 10 | Germany | 553 | 9,270 |
| Mackinac Island | 1 | 155 | Holland | 8 | 22 |
| Minnesota | 16 | 2,385 | Italy | 68 | 3,576 |
| Mississippi | 91 | 2,083 | Norway | 6 | 1,210 |
| Missouri | 244 | 4,216 | Madeira Island | 5 | 107 |
| Montana | 155 | 4,216 | Portugal | 65 | 96 |
| Nebraska | 565 | 1,061 | Sardinia | 13 | 33 |
| Nevada | 6 | 1,114 | Sweden | 22 | 9,780 |
| New Hampshire | 19 | 1,610 | Switzerland | 167 | 3,684 |
| New Jersey | 500 | 3,579 | Turkey | 1 | 21 |
| New Mexico | 10 | 3,850 | ASIA: | | |
| New York | 257 | 7,807 | Bengal | 1 | 2 |
| Ohio | 84 | 2,161 | India | 2 | 1,071 |
| Oklahoma | 28 | 324 | Palestine | 3 | 1,149 |
| Oregon | 29 | 9,015 | Petria | 6 | 50 |
| Pennsylvania | 94 | 10,270 | Siberia | 3 | 472 |
| Tennessee | 6 | 1,178 | Syria | 2 | 465 |
| Texas | 155 | 10,027 | Turkey | 4 | 25 |
| Utah | 66 | 4,999 | | | |
| Vermont | 56 | 3,679 | | | |
| Virginia | 30 | 4,875 | | | |
| Washington | 255 | 7,266 | | | |
| West Virginia | 147 | 2,189 | | | |

| | Added this Year | Total to Her- barium | | Added this Year | Total to Her- barium |
|-----------------------|-----------------------|----------------------------|--------------------|-----------------------|----------------------------|
| AFRICA: | | | AUSTRALIA: | | |
| Algeria | 1 | 365 | ..... | 1 | 2,237 |
| British East Africa.. | 8 | 131 | New South Wales... | 6 | 728 |
| Cape | 70 | 1,788 | Victoria | 2 | 435 |
| Mozambique | 17 | 24 | OCEANIA: | | |
| MALAYA: | | | Samoa | 1 | 68 |
| Borneo, North | 56 | 66 | | | |

The Department of Geology has been the recipient of an unusually large number of accessions during the year, nearly all being gifts. The continued interest of Mr. W. J. Chalmers has been evinced by his gift of a fine series of moss agates from Montana showing remarkable landscape effects, and the addition of sixteen specimens, a number of which are of high gem quality, to the crystal collection. These specimens include crystals of beryl from Brazil, tourmaline from Maine, tourmaline and kunzite from Madagascar, and quartz from Japan. Another addition to the gem collection was received from Ezra C. Knopf, who gave twenty-four specimens of rough and cut catalinite which provide a good representation of this semi-precious stone. A collection of over three thousand specimens of invertebrate fossils, besides some minerals, was presented by Mr. J. C. Langtry. This collection was gathered by the late C. B. Dyer, a well-known paleontologist, and is particularly notable for the large variety of specimens in it and the careful preparation of each. Besides representatives of several hundred species, the collection contains two paratypes. The material constituting the collection was gathered chiefly in Ohio, but other districts are represented. The collection includes a number of beautifully preserved specimens of crinoids and trilobites well adapted for exhibition, and all of the material is so well worked out that it will lend itself readily to further study. A number of specimens of minerals from localities now exhausted is another valuable feature. A fine series of fossil plants, containing representatives of nineteen species from Eocene beds of Louisiana and Texas, was presented by Prof. O. M. Ball of the Agricultural and Mechanical College of Texas. The excellent state of preservation of these fossils and the care with which they had been prepared, mounted and named by Prof. Ball gave especial value to the gift, both for the purposes of exhibition and study. The Standard Oil Company of Indiana kindly presented a collection of 168 specimens illustrating uses of petroleum wax, which shows many interesting and important substances derived from this product. This company also provided a large floor case built according to the Museum standard

design for the installment of further illustrative material which will be supplied later. A series of specimens of fuller's earths used in the clarification of oils was also presented by this company. A life-sized bust in bronze of the late Director, Frederick J. V. Skiff, was presented by Mrs. Skiff. This bust, the work of the well-known sculptor, Henry Hering, is an excellent likeness of the late, lamented Director. A number of exhibitors at the meeting of the American Mining Congress held in Chicago in October kindly gave valuable specimens from their exhibits. Among these may be mentioned thirty-four specimens of peat products presented by F. A. Wildes, State Superintendent of Mines, Minnesota; thirteen specimens of oil shales from various localities, donated by the United States Bureau of Mines; forty-five specimens of ores of Alaska presented by the Alaska Commission and John Ronan; and a number of specimens of coal and other minerals from Colorado, given by the Colorado State Bureau of Mines. A collection of 218 specimens representing important minerals and ores of the mining districts of New Mexico was received through the generosity of Mr. B. C. Gilbert. He had previously devoted several weeks to collecting in several of the localities represented. Especially new and important among these were a series of radium ores, used as a source of radium in therapeutic treatments; also fine specimens of turquoise, chalcotrichite, halotrichite and other minerals. The assistance of the Grant County Chamber of Commerce through its Secretary, Mr. Burton Bunch, in this connection is also gratefully acknowledged. Three specimens of radium ores accompanied by descriptive matter were given by the Radium Information Service, and some large showy specimens of arsenic ores and some excellent specimens of metallic arsenic were presented by Mariner and Hoskins.

Accessions during the year in the Department of Zoölogy consisted chiefly of gifts, although a number of fishes and reptiles were purchased, chiefly in the local markets. Noteworthy among the gifts was a collection of fifty-eight mounted birds and mammals received by bequest from the estate of Mrs. Katherine Rowe of Chicago. This collection contains a large number of interesting albinos and birds of abnormal coloration collected by Mr. Nicholas Rowe during a period of years in which, as editor and proprietor of the sportsman's journal, "American Field," he had especial opportunities to secure such material. Another important collection of albinos, consisting of forty-three birds and one mammal, was the gift of Mr.

Ruthven Deane of Chicago. This collection includes many specimens which have been described and recorded in ornithological journals, and it is, therefore, of considerable historical interest. The addition of these two collections to those previously possessed by the Museum makes its collections of albinotic birds one of the largest, if not the largest, in America. In the Division of Mammals, the most important accessions were two Canadian mountain sheep presented by Mr. H. B. Conover, of Chicago, and twenty skulls and horns of South African game animals presented by Mr. A. A. Davidson, also of Chicago. A novel and valuable gift of three animal groups done in bronze by Carl Akeley was presented by President Field. The subjects of these bronzes are: "The Charging Herd," representing a herd of wild elephants; "The Wounded Comrade," showing a wounded elephant being supported and assisted by two of his mates; and "Lion and Buffalo," showing a bull buffalo attacked by a lion. The Division of Insects received the welcome donation of 131 specimens of named, Florida dragon-flies, collected and presented by Mr. J. Williamson of Bluffton, Indiana. Dr. Sven Narbo kindly volunteered to collect insects in the vicinity of Stavanger, Norway, and has, so far, donated over 100 desirable specimens of various orders. The total number of accessions is 1,369, distributed as follows: Mammals, 75; Birds, 104; Birds' eggs, 4; Fishes, 54; Reptiles and Batrachians, 278; and Insects, 854.

INSTALLATION, REARRANGEMENT, AND PERMANENT IMPROVEMENT.—A total of 158 exhibition cases was newly installed in the Department of Anthropology during the year, and 478 cases were re-installed with numerous changes and improvements, making a total of 636. The total number of cases now on exhibition in this Department is 702, distributed as follows: Stanley Field Hall, 12; Edward E. Ayer Hall, 62; Mary D. Sturges Hall, 42; Hall 4, 43; Hall 5, 54; Hall 6, 50; Hall 7, 50; Hall 8, 61; Hall 9, 58; Joseph N. Field Hall, 103; Hall 23, 8; Hall 24, 80; Hall 32, 79; Hall 33, 1; Gem Room, 9. The plans, as mapped out in the old building were generally adhered to, and the installation was complete on the day of the reopening of the Museum, May 2. Higginbotham Hall, opened June 6, contains nine wall cases, showing Egyptian, Syrian and Algerian jewelry, gold and silver jewelry of India, and prehistoric American gold ornaments. On July 18, Hall 23 was thrown open to the public. In this room are shown Chinese maps, tapestries, and screens obtained by the Blackstone Expedition, and two long painted scrolls, presented in 1912 by the Tuesday Art

and Travel Club of Chicago. Three of the maps were actually printed in 1461, thirty years before the discovery of America. One, a general map of China, drawn to an exact scale, is a rubbing taken from an engraved stone tablet erected in A.D. 1136, and preserved in the Museum of Inscriptions at Si-an fu, Shen-si Province. The Eighteen Arhat, disciples of Buddha, crossing the sea, form the subject of an excellent example of silk tapestry woven in the eighteenth century. The notable achievements of the Chinese in inlaid feather-work are represented by a screen of twelve panels, each of which is adorned with a floral composition, symbolic of a month of the year, the chief decorations being formed by the bright blue feathers of the kingfisher. The two paintings are masterpieces of the Sung period (twelfth century), one illustrating the occupations, games, and pastimes of boys; the other (27 feet long) showing the life of a mediæval town with its busy streets and traffic on land and water. The 360 Japanese Surimono have been divided into four separate series to be shown in rotation. Each group is to remain on view for a period of two months. The first comprises examples of the work by the well-known artist, Hokusai, and his pupils. The second aims to illustrate the New Year's festival, as well as the games and pastimes of the people. In the third are associated those prints depicting Japanese mythology, the pantheon of the gods and heroes. The fourth series contains prints featuring domestic architecture, the house and its furniture, so that an important phase of Japanese life is brought out by each exhibit. Frank W. Gunsaulus Hall was opened on the 2nd of May, showing the work of Hokusai and the painted Tosa screen, presented to the Museum by the late Dr. Gunsaulus in 1919. Only two groups of Surimono have so far been placed on view, as the condition of the walls made the closing of Gunsaulus Hall necessary toward the middle of October. The Tinguian village group in Hall 9 has just been supplemented and completed by the addition of 206 new figures and other accessories, modeled by J. G. Praxuhn. The model is intended to show the life of a Tinguian village on a summer morning. About the houses the women are busily engaged in pounding out rice, preparing and spinning cotton, and making baskets; others are at the spring, filling their jars with water or washing clothes, while one is removing rice from the granary. Beneath one house a family group is engaged in stripping tobacco, a load of which is just being brought into the settlement by means of a carabao and sled. An old man is repairing a harrow, while a companion just from the field sits by to watch and talk. The miniature furnishings of the houses, and the various ani-



A COMPLETE FLOWERING AND FRUITING TOP OF THE COCONUT PALM.
Reproduced under the Mrs. Stanley Field Plant Reproduction Fund.

mals scattered about the scene, give a very realistic atmosphere to it. Plans for the arrangement of storage material on the third floor were drawn up last May. Storage cases were set up in the work rooms opposite the offices of the assistant curators, and storage racks were built in rooms 29-31, 33, 34, 36, 55, 65 and 66, set aside for this purpose. The unpacking, shifting, sorting and permanent placing of this material absorbed the attention of the Department for six months. The assignment of the rooms is as follows: room 28, exchange collections; room 29, pottery of Southwest North America; room 30, South America; rooms 31 and 33, India, Ceylon, Burma and Siam; room 34, Borneo, Java; room 36, Philippines; room 55, Malaya; room 65, Tibet; and room 66, China. Two special cabinets were made for the safe keeping of Chinese and Tibetan scrolls. Two screen carriers for four-foot cases and eight lay-out tables were made for the purpose of installation. The Japanese sword-guards, not utilized for exhibition purposes, have been arranged in a cabinet to serve as a study collection. The office of the Assistant Curator of Malayan Ethnology was transferred from room 36 to room 43, room 36 being utilized for storage purposes. The 170 exhibition cases, which in the beginning of the year were stored in the Boat Hall on the ground floor, were transferred to the fourth floor. It is gratifying to record that the methods of exhibition and labeling have met with universal approval, and that wide use has been made of the collections for both study and practical purposes.

Progress and achievement in the Department of Botany during the past year has been more than ordinarily satisfactory. The comfort, convenience and facilities of the offices and work rooms in the new building have rendered the efforts of the staff more efficient than could possibly have resulted in the old. The first four months of the year were devoted entirely to the arrangement, reinstallation and completion of the case installations after having been packed and moved. During this work a number of the case units were entirely readjusted and many new specimens added. Two cases were installed in Stanley Field Hall, as indexes to the character of the installations in the department itself. For these a number of elements were specially prepared: for the case illustrating plant life a delicate model of the flowers of Sugar Cane was executed and for the plant economies case two branches of resin producing plants were added to the typical specimens of rare and attractive amber-like gums. Since the opening of the Museum building to the public the following new installations have been added to those which were already in place in Hall 28—the

Hall of Plant Life: four units illustrating the more important cereal grasses; one in further addition to the Palm Family; a double unit was installed with a life-size reproduction of the flowering and fruiting top of a Coconut Palm, showing the succession of flowers and fruits from the unopened flower bud through clusters in all stages and development to the mature fruit. A unit was installed illustrating the characteristics of the Dogwood Family, including a complete, natural-size branch of the Flowering Dogwood in full flower and young leaf. Several interesting plaques were added to the cases of micro-plants devoted to the green Algae; four stages illustrating the development of *Ulothrix* through "swarm-spores"; eight stages of sexual and asexual reproduction of *Oedogonium*; and enlarged models of *Botrydium*, *Bryopsis*, *Caulerpa*, *Halimeda* and *Vaucheria*. All of the installations indicated above were of studies produced in the Sara C. Field Laboratories of the Department. In Hall 27 a central trophy installation has been made of a trunk of the California Redwood, eight feet, ten inches in diameter, this diameter being half the average growth of the species. In this hall all the tree trunks are in this ratio, therefore, this "trophy" serves as an index of comparison for all other trees therein installed. Work, preparatory to further installations, is well under way, consisting mainly of a life-size plant of the Florida Coontie, *Zamia floridana*, and a sporophyll of the "Easter Palm", *Cycas circinalis*, to typify the Cycad Family; a full size Pineapple Plant in flower and young fruit, to represent the Bromeliad Family; a flower head of the Screw-pine indicative of the peculiar Pandanus Family, and a series of enlarged glass models revealing the characteristic forms of various useful fibers such as Cotton, Flax, Ramie, Hemp, etc. To accompany the Redwood in Hall 27 a transverse "wheel" section and a large plank of the tree are nearly finished for installation. Preparatory to the issuance of a Guide or Handbook to the Department, all of the exhibit cases have been renumbered in such a way that no confusion in reference is possible and the storage lockers, containing study material, are rapidly being organized to agree with the new rearrangement of the cases. The new quarters of the Sara C. Field Laboratories Plant Reproduction Section have received material re-fitting and are being rapidly equipped to increase production of studies in plant life. The Section now occupies eight rooms on the third floor, each devoted to a special phase of work; from the Biologist's Laboratory through the Glass Worker's Shop to that in which the Assemblers complete the preparations for the Exhibit Halls. The Departmental Library room has been fitted with

cases and made ready for the permanent arrangement of its volumes and pamphlets. The four Herbarium rooms are being installed as fast as cases can be obtained. The main, or Flowering Plant Herbarium, is fully organized and open for reference.

During the early part of the year the attention of the Department of Geology was devoted chiefly to completing the installation of halls or parts of halls which had not been worked upon up to that time in order that the entire exhibition series of the Department might present a finished appearance upon the opening day. It is gratifying to report that by devoted labor on the part of the staff, including considerable overtime work, this result was accomplished. In Stanley Field Hall two wall cases and two floor cases were installed. Of these, one of the floor cases is devoted to the large Quinn Canyon meteorite, and the other to representative specimens of fossils. In one of the wall cases there was installed a collection of different varieties of quartz and in the other a collection of metalliferous minerals. In the upper part of the wall cases the specimens are installed on individual blocks fastened to the backs of the cases and these blocks also serve as supports for the labels. In the other cases, pedestals or the case floors serve as mounts. New bases carefully designed to bear the weight of the specimens and at the same time present a finished appearance, were built for two large glacial slabs in Hall 34 and the specimens installed upon them. New specimens received during the year for the Chalmers crystal collection in the same hall were placed on exhibition in the cases containing that collection and the entire collection rearranged and to some extent remounted. The collection of radium-bearing minerals shown in this hall was enlarged, rearranged and relabeled. In Hall 35, 16 tables 14 feet long and from 5 to 7 feet wide, constructed in the Museum, were placed in the west half of the hall in alcove positions. On these 53 relief maps were installed, the maps being grouped in such a manner that neighboring localities or similar physiographic types are associated in position. Two tables of smaller size at the end of the hall are used to display rainfall and glacial maps of the United States. The model of the Virginia Natural Bridge was placed in the center of the hall. Eleven maps which had not been previously framed or glazed were provided with this protection and all the maps exhibited are now safe-guarded in this manner from dust or other injury. Eight upright cases containing collections illustrating various features of physical geology were installed in the eastern end of the hall. Two of these cases are devoted to volcanic phe-

nomena, lavas, ashes, tuffs and other products of typical volcanoes being shown. In another case, cave formations, such as stalactites, stalagmites and gypsum growths from various caves are installed, care having been taken to mount each specimen in a natural position. Rock slabs showing ripple-marked and mud-cracked surfaces occupy another case, while specimens illustrating faulting and folding, joints, veins, dikes, various rock textures and dendrites occupy four other cases. The gypsum cave from Utah and the large fulgurite are also installed in this hall. The installation of Hall 36 was completed along the lines indicated in the report of last year. To the petroleum collection, which occupies the east end of the hall, considerable new material acquired during the year was added, the most important increment being a series of specimens illustrating the uses of paraffin, presented by the Standard Oil Co. (Indiana). These specimens include many bright-colored objects which relieve the somewhat somber effect of some of the other exhibits in the hall. The model of the original Standard Oil refinery at Cleveland was thoroughly renovated and installed in an individual case in an alcove adjoining the petroleum collection and the large section of an Australian coal seam was provided with a new case, the base was newly finished and it was placed near the north entrance of the hall. A model of a coal mine, showing the laying out of a mine and the extraction of the coal by the panel-retreating system, was placed near this. A model illustrating the formation of peat in a glacial lake was installed adjoining the peat exhibit. In the western half of the hall there have been installed in table cases the soil and clay collections and several minor collections, such as those of fuller's earths, mineral soaps, sands and mineral pigments. Much of this material had been withdrawn for years from exhibition on account of lack of space and the opportunity to exhibit it was, therefore, welcomed. The U. S. Department of Agriculture's official classification of soils is represented by a series of specimens received from that Department. They are shown in glass jars which fill part of an upright case. Other specimens of soils, arranged according to the better-known, ordinary groupings of loams, marls, etc., occupy four table cases, where they are displayed in shallow trays. Another table case contains groups of specimens which illustrate modes of formation of soils, compositions of soils and plant foods in soils. The largest collection in this part of the hall is the clay collection, which requires for its display thirteen table cases. These are arranged in twenty eight groups according to Orton's classification, the installation being as follows: Along the south wall a line of four



cases contains a synoptic collection which illustrates the group and serves as a key to the larger collection. The nature, origin and general character of the clays of each group are shown by labels and the relations of the groups to each other are indicated by diagrams painted on the floors of the cases, the lines of which connect with each specimen in such a manner as to make its relations to the other specimens evident. Numerous specimens of each group of clays are shown in eight adjoining cases. A briquette burned from the same clay as the specimen is frequently installed with the specimen in order to show the character of the material in its most used form. While the number of clay deposits is so great that anything like a complete collection is both impossible and undesirable, enough members of each group are shown to illustrate the great variety in character which different deposits of this useful substance assume. A collection illustrating the different effects obtained by variations in the methods of burning clay, which was received during the year, has also been installed here. Several groups of specimens also illustrate the effect of various impurities and minor components of clay upon its character when burned, while the use of clay in pottery is illustrated by a series showing stages in the manufacture of Japanese pottery. Other cases in the hall contain collections of other earthy substances of economic interest. Thus a collection of natural and Portland cements fills half of one case and a collection of fuller's earths the other half. Another case contains a collection of various kinds of sands of industrial importance, such as molding and glass sands. Uses of silica in its various forms are illustrated synoptically in another case. Earthy pigments, including ochers and allied paint substances, occupy an upright case. Two square, upright cases contain large specimens of iron ore and fluorite and a large model of the Chandler iron mine has been installed at the west end of the hall. This model, before installation, was thoroughly renovated, missing timbering restored, a new head frame built and the whole model repainted. The installation of Skiff Hall had been practically completed in 1920, but a few remaining details, such as the installation of miscellaneous labels and readjustment of the fastenings of the cases were accomplished during the past year. Some specimens received during the year were also installed among their respective groups. A mahogany pedestal was prepared for the bust of Dr. Skiff presented by Mrs. Skiff, and the bust, on this pedestal, was installed in the center of the hall. Installation of Higginbotham Hall was delayed about a month beyond that of the rest of the Museum, but owing to the isolated position of this hall, no inconvenience

resulted. The collection of gems was installed in five floor cases in this hall, the cases being first newly lined with silk, all glass carefully cleaned and all woodwork refinished. New silk mounts for the individual specimens were provided throughout, 760 mounts being used for this purpose. The mounts were also newly labeled and new labels were provided for the unmounted specimens. To the collection as previously exhibited, there was added the collection illustrating folklore of gems and that of models of historic diamonds. The hall was opened to the public on June 6. Installation in Hall 38 was chiefly confined to mounting and placing the large specimens belonging in the hall, although some case exhibits were completed, notably those of the Minooka Mastodons and the Asphaltum Beds fossils. Among the large objects installed, the fore leg of the dinosaur *Morosaurus* was mounted on its former base and missing parts of the foot restored in such a manner as to agree with present knowledge of the structure of this animal. A hind leg of the dinosaur *Camarasaurus* was remounted so that it would stand alone, instead of being partly supported by a wall as it had been as previously exhibited. These two limbs were placed on either side of an entrance to the hall, corresponding in position to the place of their period in geological time. The mounting of the skeleton of the large dinosaur, *Apatasaurus*, proved a task of considerable magnitude, but by industrious effort, was carried to completion before the opening day. Although, on the whole, as a result of careful packing, the specimen stood the jar and jolt of moving well, some breaks occurred which required repair. Among the parts which had suffered injury were some of the vertebral processes and some of the ribs and legs and pelvic bones. Much of this failure was due to the fact that the plaster used as a cement in preparing the bones had, after twenty years, become weakened and brittle. Hence a thorough recementing and refinishing of many of the bones had to be accomplished before they could be placed in position. Another difficulty in mounting was due to the fact that the height of the specimen brought it so near the ceiling that ordinary hoisting apparatus could not be employed. All these difficulties were gradually overcome, however, and an excellent mounting of the specimen accomplished. After erection of the specimen, the base on which it was mounted was carefully refinished, the metal framework repainted and a protective railing fastened about it. The mount is placed at about the center of the hall, this corresponding to its place in geologic time. At the north end of the hall a number of large mounts of fossil animals of the Pleistocene period were installed. These include a skeleton of the Mastodon, a Mastodon and a Mammoth skull, casts of *Megatherium* and *Glyp-*

odon and a restoration of the Moa. The Mastodon skeleton, which had been disarticulated for moving, was reassembled and, in remounting, some modifications were made. The tusks were reset so that instead of curving outward as formerly, they were given a position similar to that common to other members of the elephant family. Some additional supports were provided for other parts, and the entire skeleton was also cleaned and treated with shellac for the purpose of further hardening and preserving the bones. The base supporting the skeleton was refinished and all metal supports repainted. Adjoining this was placed the skull of the Yorkville Mastodon previously exhibited and a skull of the northern Mammoth, which had not been before on exhibition. The latter specimen, obtained from Wood-chopper Creek, Alaska, where it had been found in gold mining at a depth of one hundred feet, was complete and in good preservation except for one tusk. From the preserved tusk another was modeled, a base was constructed and an excellent mount thus obtained. The cast of *Megatherium*, which had been taken apart for moving, was, before mounting, joined together, several parts which had been broken for disjoining were restored and the whole cleaned, coated with shellac and recolored. The base was also thoroughly refinished. In the central isle of the hall the skeleton of the extinct Irish deer, after reassembling and cleaning was installed, as was also a cast of the skull and tusks of the elephantine genus, *Stegodon*, which had not been exhibited for several years on account of lack of space. This cast was thoroughly renovated before installation and mounted on a base remodeled from a previous use. Some renovations and repairs were also performed on other large mounts in the hall, such as those of the fossil turtle, *Colossochelys*, the jaws of the shark, *Carcharodon*, and the cast of the skull of *Dinotherium*. In the paleontological laboratory attention was chiefly devoted during the latter part of the year to preparation for exhibition of the skeleton of the Columbian Mammoth presented some years ago by Mr. George Manierre. It was deemed desirable to reconstruct the mounting of the skeleton so that a more nearly normal position would be presented and to improve the preparation of the parts. Several coats of paint with which the bones had previously been invested were removed by means of various solvents and tools and some hardening treatments were given the parts, especially the excellent tusk. The skull of a modern elephant which had previously been used in mounting the specimen was discarded and a newly modeled one based on careful studies of a more closely allied form supplied. Nine dorsal and three

caudal vertebrae were also similarly supplied by modelling from corresponding forms. The work of reconstruction of this skeleton is still in progress but it is hoped to have it soon completed. A splendid pair of lower jaws of the Columbian Mammoth which was included with the gift was prepared and placed on exhibition in a case with other bones of the Mammoth. Owing to other demands, but little time has been available for work upon the study collections, but opportunity was found to unpack and install in drawers the systematic lithological study collection numbering 1305 specimens, and the collection of rocks of Lake Superior numbering 87 specimens. Labels were installed with the specimens and easy accessibility of the collections provided. The study collections in vertebrate paleontology have also been largely unpacked and distributed in trays or upon shelves, though the complete organization of this series has not yet been accomplished.

Reinstallation of the exhibits in the Department of Zoology continued from January until the opening of the Museum, the entire staff being engaged in this work continuously. The greatest physical task was presented by the large habitat groups of birds and mammals. These had been entirely dismantled for moving and, although such accessories as leaves and flowers had been carefully preserved, they were frequently dissociated and required skillful reassembling. The actual groundwork of these cases was inevitably destroyed or so altered that in most cases it was necessary to resurface it. The snow scenes, such as those in the Polar Bear, Musk Ox, and several bird groups, suffered especially and were completely redone. The groups of African game animals, the Deer group, and others had been photographed from various angles and these photographs served as guides in reinstalling the scenes in their original form. The work was accomplished expeditiously and successfully at the expense of much time and labor on the part of the taxidermists. New labels were written and printed for all the larger groups and for much other material. Owing to the lack of space in any one hall for the entire systematic exhibit of mammals, this exhibit was divided by placing the so-called "horned and hooved" mammals in Pullman Hall and other mammals, from marsupials to apes and monkeys, in the adjoining Hall 15. From May until December unsettled conditions prevented continuous work on new exhibits of mammals and birds, but so far as possible the taxidermists have modeled and prepared manikins for the group of Olympic Elk and have repaired and remounted birds for the systematic exhibit. For Stanley Field Hall, three new groups were prepared and installed. One of these shows a



SEAPES AND BLANKETS, NORTHERN MEXICO.
Showing Method of Screen Installation (Case 1, Hall 8).

Red Fox in a woodland setting pausing before a log and listening to several mice which are quarreling beneath it. Another shows a winter scene with a Horned Owl pouncing upon a rabbit and a third displays various species of Birds of Paradise. Although considerable preparation had been made before removal from the old building, it was found necessary in installing the exhibit of fishes to make what was practically a new exhibit with almost complete rearrangement. Much of the material was poorly mounted or poorly colored after mounting. Some of this was discarded and the rest repaired and refinished. After the opening of the Museum, work was continued on the fish exhibit and altogether thirty new mounts have been prepared, twenty-eight repaired or remade, and thirty-eight casts made and colored. In this work a new method was employed to a large extent involving the use of a cast of the body of the fish combined with the real fin and tail. This method has proved expeditious and has given very satisfactory results in all cases where fresh specimens have been available for use as models. The reptile exhibit, which had never been large was reduced by the elimination of imperfect and unworthy specimens to a total of three cases. In one is a single large alligator; another is devoted principally to turtles; and the third contains miscellaneous snakes and lizards. Preparations have been made for the improvement of this exhibit and a number of additional specimens have been prepared. Many snakes and nearly all frogs cannot be prepared satisfactorily by the usual methods and the specimens heretofore shown have been far from pleasing or realistic. To overcome this the taxidermist has perfected a method by which these animals may be reproduced in celluloid so as to give an exceedingly lifelike appearance, far superior to anything accomplished by previous methods. Work has already been completed on models of two frogs, one soft-shelled turtle, and four snakes and progress made on a number of others. During the first half of the year the Associate Curator was occupied continuously with the tedious and exacting task of reinstalling the exhibit of invertebrates, including the very large collection of shells, some 1,200 units of which were provided with new labels. For Stanley Field Hall, a new installation was prepared in a wall case showing some of the more interesting invertebrates, such as sponges, jelly-fishes, corals, star-fishes, sea-urchins, and a series of beautiful and useful shells. Later in the year considerable time was devoted to finishing a new case containing two habitat groups of insects. One of these groups represents a scene in the dune region near Miller, Indiana, and shows the characteristic insects of that region. The other illus-

itates, by means of wax accessories and a tinted, bromide enlargement, the destructive work and the various stages of growth of the well-known tomato worm moth. After this case was finished, work was begun with a view to condensing the shell exhibit by the careful elimination of duplicates. Progress thus far indicates that a fifty per cent condensation is feasible without loss of effect. In the Division of Osteology, prior to actual reinstallation, there was a considerable period of unpacking, cleaning, mending and remounting of the large skeletons, such as those of the whales, elephants, and other large mammals. These were then installed in open stands in the hall assigned to them and a certain number, for lack of space, were consigned to storage. Similar work proceeded with small and medium-sized skeletons and these were installed on shelves in closed cases. In the latter part of the year the skeleton of a large adult Chimpanzee was remounted to replace an immature example, about 150 skulls were cleaned, and a beginning was made in the work of unpacking, classifying, and labeling the small unmounted ligamentary skeletons of the reference collection in comparative osteology. The reference collection of fishes and reptiles was placed on shelves and a beginning made toward getting the material into well classified and accessible condition.

EXPEDITIONS.—Under the patronage of Mr. William J. Wrigley, Jr., the Curator of the Department of Botany visited the Gray Herbarium, Harvard, the New York Botanical Garden, and the United States National Herbarium at Washington, for the purpose of studying the older collections from Santa Catalina Island, California. He was accorded the privilege of examining the material in each institution and amassed data that will materially aid in the preparation of a Flora of the island. The Curator also made two trips to Geneseo, Illinois, during which he packed the complete Harper Herbarium for shipment to the Museum; and a trip to Pharr, Louisiana, where he secured a complete series of specimens for installation, representing the production of cane sugar through all steps in its extraction and crystallization.

THE N. W. HARRIS PUBLIC SCHOOL EXTENSION OF FIELD MUSEUM OF NATURAL HISTORY.—Sixteen cases were prepared during the past year and listed with those already available for loaning to the public schools. With the addition of these cases a total of 693 has been reached. The resignation of the chief taxidermist created conditions that were, for the greater part of the year, unfavorable to a larger production of cases. Though

the department was fortunate in securing the services of a former assistant, his work was not of a wholly productive nature owing to the many demands made upon his time by the repairs that were necessary to entomological specimens and to group accessories. Several conferences were held with Mr. Dudley Grant Hays, Director of Visual Instruction in the public schools, for the purpose of discussing the system of loaning cases to the schools and of the study of them while there. On Mr. Hays' recommendation, a list of case subjects available for school use was placed on file in the office of each principal where it could be consulted by the teachers with a view to making selections which would correlate certain lessons. He also sent to all public schools and branches a bulletin containing directions for reaching the Museum, rules of admission to it, references to lunches and lunch room, and requests to teachers as to the care of loan cases. In many other helpful ways, Mr. Hays has taken active part. The new chassis purchased during the school vacation and fitted to the old, but repaired and repainted delivery truck body, is better suited for the purposes of this department than the former one. With it, it has been possible to maintain a school day schedule since the beginning of its service. This schedule consists of collections of cases from ten schools and the delivery of them to the same number of schools. With the former chassis only eight collections and deliveries could be made. The addition of thirty-two more schools to the previous schedule demanded this increased daily service. With this addition a total number of 320 schools is listed to receive the cases. Additional visits of inspection and inquiry were made by members of the bureau of exhibits of the United States Department of Agriculture. Desirous of having in Pittsburgh a circulating system of loan cases similar to the Harris Extension, Mr. John A. Hollinger, Director of Visual Instruction in the public schools of that city visited the Chicago public schools for the purpose of getting first hand information as to the utilization of the cases of this department and the benefit derived from them. He also sought information of this department concerning its methods of preparing and circulating its cases. Upon request twenty-five cases were loaned at one time to the Washburne Continuation School for its course during July and August. The three classes of students in this school are: the disabled soldiers assigned to it by the Federal Board of Vocational Education; apprentices in different trades; and the fourteen to sixteen year old working boys who are required to attend school eight hours a week. In connection with the loan of the cases to this school, Mr. E. G. Bauman, in charge

wrote: "The fine collection which you kindly sent us early in the summer created so much interest and was of such great value to our continuation schoolboys as to show that the collection was a great educational factor. We hope that you may see your way clear to put our school on the list of those to which collections are sent from time to time." This school has been listed to receive cases. Mr. Paul M. Rea, Director of the Cleveland Museum of Natural History, requested that twelve cases be loaned to the Cleveland School of Education for the purpose of supplementing a course on visual instruction to be given by that institution during this summer term. The request was granted and a selection of the cases was made by Mr. Rea. Several cases were loaned to the Chicago Chapter of the Wild Flower Preservation Society of America for its annual exhibition. A loan of cases was also made to the Conservation Committee of the Second District of the Illinois Federation of Woman's Clubs for its second annual bird-house exhibit.

PHOTOGRAPHY AND ILLUSTRATION.—The following is a tabulation of the work performed in this section:

| | Number of Lantern Slides Made | Number of Post Cards Made | Number of Negatives Made | Number of Prints Made |
|------------------------|-------------------------------------|---------------------------------|--------------------------------|-----------------------------|
| General | .. | 32 | 55 | 765 |
| Anthropology | .. | .. | 160 | 514 |
| Botany | .. | .. | 79 | 142 |
| Geology | .. | .. | 19 | 58 |
| Zoology | .. | .. | 20 | 83 |
| Harris Extension | .. | .. | 47 | 108 |
| Sale | 24 | .. | ... | 260 |
| Gift | 14 | .. | ... | 84 |
| Totals | 38 | 32 | 305 | 2,016 |

PRINTING.—The number of labels and other impressions turned out by the Section of Printing for the various departments is as follows:

| | Exhibition Labels | Other Impressions |
|------------------------|----------------------|----------------------|
| Anthropology | 5,037 | 2,040 |
| Botany | 1,777 | 4,350 |
| Geology | 4,046 | ... |
| Zoology | 2,917 | 5,600 |
| Harris Extension | 98 | 950 |
| General | 180 | 37,337 |
| Library | ... | 4,000 |

ATTENDANCE.—It is gratifying to record the large increase in attendance since the removal of the collections to the new building. During



MOSS AGATES IN HUMBOLDT HALL.
Gift of Mr. William J. Chalmers.

the 241 days from May 2 to December 31, the total admissions were 517,285 of which 425,001 were free and 92,284 were paid admissions, as against 328,321, the best total attendance for any one year in Jackson Park. The most encouraging figures, however, are those of the attendance of public school children, students and teachers. The figures in the period under review show a total attendance of 21,928 as against a best total of 9,118 for any one year in Jackson Park. Details of the attendance record and the receipts from attendance will be found elsewhere in this report.

Herewith are also submitted financial statements, lists of accessions, names of members, etc., etc.

D. C. DAVIES, Director.

STATEMENT OF INCOME AND EXPENSES.

Year Ending December 31, 1921.

INCOME

| | | |
|--|--------------|--------------|
| Admissions and Check Rooms..... | \$ 22,118.93 | |
| Dues of Members..... | 530.00 | |
| South Park Commissioners..... | 26,250.60 | |
| Sundry Receipts..... | 1,150.72 | |
| General Fund..... | 35,261.55 | |
| Endowment Fund—Income..... | \$134,803.51 | |
| Less amount transferred to Sinking Fund for 1921.. | 5,000.00 | 129,803.51 |
| Contribution—Marshall Field..... | \$215,123.73 | |
| | 65,000.00 | |
| Gross Income..... | | \$280,123.73 |

EXPENSES

| | | |
|--|--------------|--------------|
| Salaries..... | \$102,426.29 | |
| Heat, Power and Light..... | 38,109.19 | |
| Mechanical Force and Maintenance Supplies..... | 57,497.73 | |
| General Expense..... | 8,663.80 | |
| Guard and Janitor Service..... | 40,567.63 | |
| Fire Protection Service..... | 1,042.97 | |
| Departmental Installation Supplies..... | 9,515.01 | |
| Publications..... | 2,930.80 | |
| Printing and Photographic Supplies..... | 1,460.79 | 263,114.18 |
| Net Income for Year carried to Capital Account.... | | \$ 17,009.55 |

THE N. W. HARRIS PUBLIC SCHOOL EXTENSION.

Statement of Income and Expenses for Year 1921.

INCOME

| | | |
|--|-------------|-------------|
| Interest and Dividends on Investments..... | \$12,706.66 | |
| Less Collection Charges..... | 346.39 | |
| Interest on Bank Balances..... | \$12,450.27 | |
| | 21.61 | |
| Gross Income..... | | \$12,471.88 |

EXPENSES

| | | |
|---|------------|-------------|
| Expense of Distribution of Cases to Public Schools.... | \$2,128.88 | |
| General Expense..... | 103.78 | |
| Salaries..... | 6,923.32 | 9,155.98 |
| Deduction from Income (Depreciation of Automobile Delivery Car)..... | | \$ 3,315.00 |
| | | 662.24 |
| Balance transferred to Reserve Fund..... | | \$ 2,713.66 |

FINAL STATEMENT OF COSTS OF REMOVAL OF MUSEUM FROM JACKSON PARK TO GRANT PARK.

Pittsburgh Plate Glass Company:

| | | |
|--|-------------|--------------------|
| Labor—cost of dismantling glass in large cases, packing and unpacking..... | \$ 6,649.96 | |
| For specially constructed glass boxes.....\$630.72 | | |
| Less Salvage | 114.66 | 516.06 |
| | | <u>\$ 7,166.02</u> |

Fort Dearborn Storage Company:

| | | |
|---|-------------|-----------|
| Labor—loaders, unloaders and claspers.. | \$30,790.81 | |
| Truck hauling contract..... | 6,028.59 | 36,819.40 |

Illinois Central Railroad:

| | | |
|---|-------------|-----------|
| Installation and removal of tracks..... | \$16,988.01 | |
| Hauling 321 cars and demurrage..... | 9,904.00 | 26,892.01 |

City of Chicago

| | | |
|--|--|--------|
| Cost of restoring pavement at 58th Street, etc. | | 235.67 |
|--|--|--------|

S. M. Hunter & Company:

| | | |
|---|--|--------|
| Dismantling large exhibition cases..... | | 806.10 |
|---|--|--------|

South Park Commissioners:

| | | |
|--|--|----------|
| Replacing roadways, sidewalks and re-sodding | | 1,865.57 |
|--|--|----------|

Chicago Surface Lines:

| | | |
|--|--|----------|
| Labor and material—installation of railroad crossing at 58th Street and Stony Island Avenue..... | | 1,779.03 |
|--|--|----------|

Miscellaneous contractors:

| | | |
|--|-------------|----------|
| Building platforms and runways at Jackson Park, hauling and removing cinders for tracks..... | \$ 3,277.77 | |
| Less Salvage | 591.00 | 2,686.77 |

Miscellaneous Items:

| | | |
|--|-----------|----------|
| Premiums on bonds..... | \$ 150.00 | |
| Steel plates..... | 69.00 | |
| Plate glass insurance—two loads of glass | 210.00 | |
| Tarpaulins, wire rope, dollies and accessories | \$913.83 | |
| Less Salvage | 130.00 | 783.83 |
| Rent of hoists..... | 300.00 | |
| Blue prints, advertising, printing, teaming, plates, etc. | 72.00 | 1,484.83 |

Total \$71,755.40

Cost of packing supplies used during a period of two years prior to moving..... \$ 4,897.52

ATTENDANCE STATISTICS

FROM MAY 2, 1921 TO DECEMBER 31, 1921.

| | |
|--|---------|
| Total Attendance | 517,285 |
| Paid Attendance | 92,284 |
| Free Admission on Pay Days: | |
| School Children | 16,298 |
| Students | 4,857 |
| Teachers | 773 |
| Members—Corporate | 39 |
| Life | 81 |
| Annual | 24 |
| Officers' Families | 18 |
| Press | 13 |
| Special | 28 |
| Admission on Free Days: | |
| Thursdays | 87,731 |
| Saturdays | 90,341 |
| Sundays | 220,744 |
| Highest Attendance on any day (May 8, 1921) | 28,528 |
| Lowest Attendance on any day (December 16, 1921) | 86 |
| Highest Paid Attendance (September 5, 1921) | 1,831 |
| Average Daily Admissions | 2,137 |
| Average Paid Admissions | 668 |
| Guides sold | 19,194 |
| Articles checked | 20,996 |
| Picture Postal Cards sold | 300,436 |



TYPE OF CASE LOANED BY THE N. W. HARRIS PUBLIC SCHOOL EXTENSION OF FIELD MUSEUM OF NATURAL HISTORY.

ACCESSIONS

DEPARTMENT OF ANTHROPOLOGY

AYER, EDWARD E., Chicago.

- 1 Navaho blanket—Arizona and New Mexico (gift).
- 1 carved snow-beater of walrus ivory, 1 beaded buckskin gun-case—Eskimo and Sioux, Alaska and United States (gift).

BABCOCK, FREDERICK R.,

Wheaton, Illinois.

- 1 polished stone axe, 1 circumcission flint knife in sheath—Australia (gift).
- 1 decorated lacquer feast-bowl—Burma (gift).

BODE, MRS., Chicago.

- 1 metate with two mullers—Mexico (gift).

BRAND, S. H., Chicago.

- 1 wood-carved figurine of St. Regis Indians—New York State (gift).

BROWN, WILLIAM A.

- 1 walrus tusk engraved with hunting scenes—Eskimo, Alaska (gift).

CHALMERS, WILLIAM J., Chicago.

- 1 large cloisonné enameled jar, latter part of fifteenth century—China (gift).

DICKINSON, MR. AND MRS. ROBERT BELVILLE, Chicago.

- 1 piece of tapa cloth—Suva, Fiji Islands (gift).

DIETERICH, REV. AND MRS. F. W., Nanking, China.

- 1 woman's hair ornament, 1 silver charm, 1 brass censer with base—China (gift).

EMMONS, LIEUT. G. T., Greenholm, Princeton, New Jersey.

- 1 wood-carved bark shredder, 1 galle of musk-ox horn, 1 powder horn—Nishka, Tlingit

and Eskimo, Northwest coast of America and Alaska (exchange).

FIELD MUSEUM OF NATURAL HISTORY.

Purchases:

- 4 busts and 8 casts of skulls and jaws of prehistoric men, from Professor J. H. McGregor of Columbia University, New York.
- 1 winter ceremonial robe, 1 sash, 1 winter coat, 1 summer ceremonial fancy robe, 1 sash, 1 striped silk street robe, 1 double sash, 1 crepe undergarment from Miss Michi Sato—Japan.
- 1 serape (blanket)—Saltillo, Mexico.
- 1 chief's robe of palm fiber—Basongo tribe, Congo, Africa, from Rev. J. F. Pieters, Springfield, Kentucky.

FLEMING, ROBERT H., Chicago.

- 45 swords, daggers, and other weapons, 5 embroideries, 2 batika, 6 sword-guards, 6 albums of color prints and paintings, 16 miscellaneous objects—China, Japan, India, Turkey, North Africa, Java (gift).

FRIESSER, JULIUS, Chicago.

- 2 pieces of pottery, 1 vessel of carved gourd—Ecuador and British Guiana, South America (gift).

GALLAGHER, J. F., Chicago.

- 1 grooved stone axe—Hot Springs, Garland County, Arkansas (gift).

GOURLEY, W. J., Chicago.

- 1 unfinished stone axe—Wamonda, Lake County, Illinois (gift).

GREENLEE, MRS. RALPH S.
Chicago.

- 1 alabaster model of the Taj Mahal (with glass case and pedestal)—Agra, India (gift).

GUNSAULUS, MISS HELEN C.
Chicago.

- 360 Japanese surimono (color print cards for special occasions, made between 1780 and 1850)—Japan (gift).

- 1 comb, 3 hairpins—Japan (gift).

GUTH, MRS. J., Chicago.

- 1 brass image of Indian deity—South India (gift).

HAWDEN, J., Seatonville, Illinois.

- 1 large grooved axe of grayish rock, Princeton, Illinois (gift).

JURGUTIS, PAUL.

- 1 basket of Lithuanian type (gift).

LATHROP, BARBOUR, Chicago.

- Ethnographical material, chiefly kris, spears, bows, ornaments, carvings, 97 specimens—Korea, Dutch Indies, and Dutch New Guinea (gift).

LOVETT, FRANK E., Chicago.

- 1 model of outrigger canoe, woven grass bag, fly whisk—Philippines, Liberia, China (gift).

PARSON, L. D., Glen Ellyn, Illinois.

- 1 painted buffalo skin—Plains Indians, Indian Territory, U. S. (gift).

PETERS, ROBERT D., Knox, Indiana.

- 1 grooved stone axe—near Knox, Indiana (gift).

PERKINS, MRS. E. T., Chicago.

- 12 old American Indian baskets.

- 1 band of beadwork—Alaska and California (gift).

RUMSEY, MRS. MINNIE, Lake Forest, Illinois.

- 632 printing blocks of Indian sign language, chiefly electrotypes, a few zinc etchings (gift).

RYERSON, MARTIN A., and SARGENT, HOMER E.

- 18 serapes—Cochulla, Sonora, etc., Mexico (gift).

SARGENT, HOMER E., Pasadena, California.

- 215 baskets from 23 North American tribes, 1 bear scent carrier of horn (gift).

SATO, MISS MICHU, Tokyo, Japan.

- 3 pairs of shoes, 1 pair of clogs, 1 pair of sandals with brocade covering, 1 pair of straw sandals—Japan (gift).

- 5 switches of Japanese hair—Japan (gift).

SIMPSON, MRS. WILLIAM.

Chicago.

- 1 large black and white olla—Province Tusayan, Arizona (gift).

TRAH, HENRY J., Chicago.

- 1 large grooved axe-head, of grayish igneous rock—Lemont, Illinois (gift).

WILKINS, MISS HELEN, Chicago.

- 1 Japanese robe of gray silk, worn during wedding ceremony (gift).

WILLIAMS, DR. HUGH R., Chicago.

- 3 stone chisels, 1 grooved axe, 34 stone arrowheads—Prairie du Chien, Wisconsin (gift).

DEPARTMENT OF BOTANY.

AYER, MRS. EDWARD E., Chicago.

- 1 herbarium specimen—Wisconsin (gift).

BAILEY, L. H., Ithaca, New York.

- 1 herbarium specimen—Venezuela (gift).

BARTHOLOMEW, E., Stockton,

Kansas.

- 3 herbarium specimens—Santa

- Catalina Island, California (gift).

BLAKE, DR. S. F., Smithsonian Institution, Washington, D. C.

- 5 herbarium specimens—Santa Catalina Isl., California (gift).

BENKE, H. C., North Crystal Lake, Illinois.

- 1 herbarium specimen—Illinois (gift).

CANADIAN PACIFIC RAILWAY.
Department of Natural Resources, Alberta, Canada.

38 economic specimens, barley, oats, wheat, alfalfa, grass, clover, flax.—Alberta (gift).

DAHLGREN, B. E., Chicago.

15 economic specimens—various localities (gift).

DAVIDSON, DR. A., Los Angeles, California.

1 herbarium specimen—Santa Catalina Island, California (gift).

THE FIERE PIPE COMPANY,
Indianapolis, Indiana.

2 economic specimens Bernice Fibre Pipe—Indiana (gift).

FIELD MUSEUM OF NATURAL HISTORY.

Collated by B. E. Dahlgren:

1 herbarium specimen.

Purchases:

66 herbarium specimens—Maine.

1 Lycopodium Powder from drug store.

600 fungi specimens—various localities.

517 herbarium specimens—California and Oregon.

1 fungus gall on cedar bark—Wisconsin.

GRAY HERBARIUM, HARVARD UNIVERSITY, Cambridge, Massachusetts.

1 photographic print of type plant Berlin Herbarium (exchange).

70 herbarium specimens—Nova Scotia (exchange).

IDAHO AGRICULTURE EXPERIMENT STATION, Aberdeen, Idaho.

17 barley, wheat and oat specimens—Idaho (gift).

KNOPP, EZRA C., Santa Catalina Island, California.

114 herbarium specimens—Santa Catalina Island, California (gift).

101 herbarium specimens—Santa Catalina Island, California (gift).

99 herbarium specimens—Santa Catalina Island, California (gift).

MILLSAUGH, DR. C. F., Chicago.

20 herbarium specimens—Santa Catalina Island, California (gift).

555 herbarium specimens—various localities (gift).

MOXLEY, GEO. L., Los Angeles, California.

23 herbarium specimens—Santa Catalina Island, California (gift).

MURRAY, W. H., Norwalk, Ohio.

2 ramie fibre—Ohio (gift).

NEW YORK BOTANICAL GARDEN, Bronx Park, New York.

1 herbarium specimen—Cuba (exchange).

1 herbarium specimen—Trinidad, W. I. (exchange).

790 herbarium specimens—various localities (exchange).

3 herbarium specimens (gift).

1 fungus—Berry Islands (exchange).

NUTTALL, L. W., Philipsburg, Pennsylvania.

1250 herbarium specimens—Santa Catalina Island, California (gift).

7 herbarium specimens—Santa Catalina Island, California (gift).

PLITT, C. C., Baltimore, Maryland.

25 herbarium specimens, lichens—Santa Catalina Island, California (exchange).

RICE, EXPERIMENT STATION, Crowley, Louisiana.

3 economic specimens—Louisiana (gift).

SHERFF, EARL E., Chicago.

8 herbarium specimens—Chicago (gift).

THE TERRITORY OF ALASKA.

1 economic specimen (wild grass)—Alaska (gift).

U. S. DEPARTMENT OF AGRICULTURE, Bureau of Plant Industry, Washington, D. C.

23 varieties of soy beans (gift).

11 varieties of wheat specimens—United States (gift).

- 1 herbarium specimen (gift).
- 12 varieties of soy beans (gift).

U. S. NATIONAL HERBARIUM,
Smithsonian Institution,
Washington, D. C.

- 3 herbarium specimens—various
localities (exchange).

UNITED STATES NATIONAL
MUSEUM, Smithsonian Institution,
Washington, D. C.

- 60 herbarium specimens—various
localities (exchange).

UNIVERSITY OF CALIFORNIA,
Berkeley, California.

- 7 herbarium specimens—Santa
Catalina Island, California
(exchange).

WRIGLEY, JR., WILLIAM J.,
Chicago.

- 581 plants of the older collectors
on Santa Catalina Island—
various localities (gift).

DEPARTMENT OF GEOLOGY.

ALASKA COMMISSION TO
AMERICAN MINING
CONGRESS, Juneau, Alaska.

- 16 specimens of ore—Alaska
(gift).

AMERICAN FLUORSPAR CO.,
Wagon Wheel Gap, Colorado.

- 7 specimens of fluorite and barite
—Wagon Wheel Gap, Colorado
(gift).

BALL, PROF. O. M., College Station,
Texas.

- 20 specimens of fossil plants—
Manahfield La. and Brazos
County, Texas (gift).

BLACK PRODUCTS CO., THE,
Riverdale Station, Chicago.

- 9 specimens of coal-tar-pitch
products (gift).

BROWN, GUS E., Galena, Illinois.

- 7 specimens of lead and zinc ores
Galena, Illinois (gift).

BUCKSTAFF, RALPH N., Oshkosh,
Wisconsin.

- 11 specimens of Cumberland Falls
meteorite—Cumberland Falls,
Kentucky (exchange).
- 1 individual meteorite—Holbrook,
Arizona (gift).

CHALMERS, WILLIAM J., Chicago.

- 1 specimen of silver rosette—
Boulder, Colorado (gift).
- 13 specimens of moss agate and
jasper—Glendive, Montana
(gift).
- 13 specimens of crystals—various
localities (gift).
- 3 specimens of tourmaline crystals
—Mt. Mica, Paris, Maine
(gift).

COLORADO FUEL & IRON CO.,
Denver, Colorado.

- 1 specimen of bituminous coal
Rockvale, Fremont Co., Colo-
rado (gift).

COLORADO STATE BUREAU OF
MINES, Denver, Colorado.

- 6 specimens of coal—Colorado
(gift).
- 2 specimens of ore—Colorado
(gift).
- 2 maps—Colorado (gift).

COLORADO & UTAH COAL CO.,
Denver, Colorado.

- 1 specimen of bituminous coal—
Mt. Harris, Routt Co., Colo-
rado (gift).

COOPER, A. T., Webster, South
Dakota.

- 1 specimen of covellite with
chalcopyrite—Mills Mine near
Carbo, Sonora, Mexico (gift).

DENVER FIRE CLAY CO., THE,
Denver, Colorado.

- 3 specimens of fire clay—Golden,
Colorado (gift).

FIELD MUSEUM OF NATURAL
HISTORY.

Collected by O. C. Farrington:

- 1 specimen of glacial striac on
lepidolite—Paris, Maine.

Purchases:

- 6 specimens of minerals—
Leadville, Colorado, and
Minasragra, Peru.
- 1 specimen of tschermigite—
Wamsutter, Wyoming.

GALLAGHER, J. F., Chicago.

- 1 specimen of fuller's earth—
Arkansas (gift).

- 1 specimen of rock weathering—Arkansas (gift).
- 1 specimen of chert—Hot Springs, Arkansas (gift).
- 4 specimens of catlinite—Pipestone, Minnesota (gift).

GATES, MYRON C., Gordon, Nebraska.

- 6 specimens of sand-calcite crystals—Bad Lands, South Dakota (gift).

GILBERT, B. C., Chicago.

- 1 specimen of torbernite—Silver City, New Mexico (gift).
- 3 photographs taken by emanation from the specimen (gift).
- 218 specimens of minerals, ores and fossils—New Mexico (gift).

HEAD, R. E., Salt Lake City, Utah.

- 13 specimens of coals and ores—Utah (gift).

HICKMAN, C. B., Silver City, New Mexico.

- 7 specimens of fluorite—Gramma, New Mexico (gift).

HUNTOON, J. E., Chicago.

- 7 specimens of mica—Keystone, South Dakota (gift).

HUTCHINSON, MRS. C. L., Chicago.

- 1 specimen of bleached sandstone—Huron Mountain, Michigan (gift).

KENT, C. A., Chicago.

- 5 specimens of colored sands—MacGregor, Iowa (gift).

KING, C. H., Chicago.

- 2 specimens of fossil coral—Elk Lake, Michigan (gift).

KNOFF, EZRA C., Avalon, California.

- 1 specimen of water agate—Santa Catalina Island, California (gift).
- 1 specimen of blister pearl—Santa Catalina Island, California (gift).
- 2 specimens of miscellaneous minerals—Santa Catalina Island, California (gift).
- 24 specimens of catlinite—Santa Catalina Island, California (gift).

KÖNSBERG, A. V., Chicago.

- 1 specimen of tufa—Mammoth

Hot Springs, Yellowstone Park (gift).

- 1 specimen of blende—Galena, Illinois (gift).

LANGTRY, J. C., Chicago.

- 32 specimens of minerals—various localities (gift).
- 3161 specimens of fossils—various localities (gift).

MARINER AND HOSKINS, Chicago.

- 9 specimens of metallic arsenic—Chicago (gift).
- 12 specimens of arsenic ores—Tonopah, Nevada (gift).

MAUCIEL, IGNAZIO, Chicago.

- 1 specimen of fossil coral—Burlington, Illinois (gift).

PATEE, FRED, Casper, Wyoming.

- 1 specimen of bentonite—Wyoming (gift).

RADIUM INFORMATION SERVICE, New York City.

- 3 specimens of carnotite—Long Park, Colorado (gift).

ROCKY MOUNTAIN FUEL CO.,

Denver, Colorado.

- 1 specimen of bituminous coal—Superior, Colorado (gift).

RONAN, JOHN, Hyder, Alaska.

- 29 specimens of ore—Salmon River District, Alaska (gift).

ROYSE, R. L., Ogden, Utah.

- 1 specimen of tschermigite—Wamsutter, Wyoming (gift).

SKIFF, MRS. FREDERICK J. V., Chicago.

- Bronze bust of Dr. Frederick J. V. Skiff (gift).

SMITH, COLLINS C., Chicago.

- 1 specimen of asbestos—Wisconsin (gift).

SMUGGLER UNION MINING CO.,

Telluride, Colorado.

- 3 specimens of concentrates—Telluride, Colorado (gift).

STANDARD OIL CO. (Indiana), Chicago.

- 16 specimens of fuller's earth—Olmstead, Pulaski Co., Illinois (gift).
- 168 specimens of petroleum wax and products (gift).

STEPHEN, MRS. G. M., Chicago.

- 1 specimen of quartz—Los Cerrillos, New Mexico (gift).
- 8 specimens of turquoise—Los Cerrillos, New Mexico (gift).

STEWART, ROBERT B., Chicago.

- 2 specimens of lead and zinc ore—Gunnison Co., Colorado (gift).

SUNNYSIDE MINING & MILLING CO., Eureka, San Juan Co., Colorado.

- 8 specimens of ore—Eureka, San Juan Co., Colorado (gift).

THOMAS, R. K., Navajo, Arizona.

- 4 specimens of fossil mollusks—Seven Springs, Arizona (gift).

THOMAS, W. S., Elgin, Illinois.

- 1 specimen of cerussite—near Salt Lake City, Utah (gift).

U. S. BUREAU OF MINES, Boulder, Colorado.

- 2 specimens of oil shale—Colorado

and Wyoming (gift).

- 13 specimens of oil shale and products—Colorado, Wyoming and Utah (gift).

UNITED STATES GYPSUM CO., Chicago.

- 1 specimen of rose petal anhydrite—Gypsumville, Manitoba (gift).

VICTOR-AMERICAN FUEL CO., Denver, Colorado.

- 2 specimens of bituminous coal—Routt Co., Colorado (gift).

WESTERN BRICK CO., Danville, Illinois.

- 3 specimens of shale—Danville, Illinois (gift).
- 20 specimens of briquettes—Danville, Illinois (gift).

WILDES, F. A., St. Paul, Minnesota.

- 2 specimens of ore—St. Louis Co., Minnesota (gift).
- 34 specimens of peat—St. Louis Co., Minnesota (gift).

DEPARTMENT OF ZOOLOGY

ABBEY, H. S., Chicago.

- 1 dragonfly—Chicago (gift).

ALLEN, G. W., Chicago.

- 1 beetle, 1 moth—Chicago (gift).

AMERICAN RAILWAY EXPRESS CO., Chicago.

- 9 moths—East Indies (gift).

AYRES, HOWARD, Chicago.

- 2 fishes—(exchange).

BRANDLER, CHARLES, Chicago.

- 2 fox squirrels—Wisconsin (gift).
- 1 trout perch—Lake Michigan (gift).

BRAZA, JOSEPH A., East Las Vegas, New Mexico.

- 5 horned toads, 1 prairie rattlesnake—Levy, New Mexico (gift).

BRUSOR, FRANK, New Boston, Ill.

- 2 large soft-shelled turtles—New Boston, Illinois (gift).

BUETTNER, JOHN, Chicago.

- 1 lizard—Lakeland, Florida (gift).
- 1 millipede, 1 scorpion, 1 mantis—Lakeland, Florida (gift).

CORBS, B. B., Chicago.

- 1 spider—Chicago (gift).

CONOVER, H. B., Chicago.

- 1 skull of grizzly bear—Canada (gift).
- 1 mounted mourning dove (gift).
- 3 mountain sheep, 1 ground squirrel—Yukon Territory (gift).

DAHLGREN, B. E., Chicago.

- 1 rattlesnake—Florida (gift).

DAVIDSON, A. A., Chicago.

- 20 skulls and horns of mammals—South Africa (gift).

DEANE, RUTHVEN, Chicago.

- 43 albino birds, 1 albino squirrel (gift).

DEICHMANN, N. J., Chicago.

- 1 praying mantis—Irving Park, Illinois (gift).

EDGAR, C. T., Hazelhurst, Wisconsin.

- 1 camel cricket—Hazelhurst, Wis. (gift).
- 1 mounted loon—Hazelhurst, Wis. (gift).

FIELD, STANLEY, Chicago.

3 bronze animal groups by Carl Akeley:

A Charge of African Elephants;

The Wounded Comrade;
Fight Between Lion and Buffalo.

} gift

FIELD MUSEUM OF NATURAL HISTORY.

Received from Museum Guard:

1 least bittern.

Collected by A. C. Weed:

10 dragonfly nymphs—Dupage, Ill.

Collected by Wm. J. Gerhard:

87 dragonflies, grasshoppers, bugs, ant-lions, butterflies, moths, flies, beetles, bees, wasps and parasites—northern Illinois and northern Indiana.

Collected by E. Liljeblad:

91 millipeds, centipedes, dragonflies, ant-lions, bugs, grasshoppers, butterflies, moths, flies, beetles, bees, wasps and parasites—northern Illinois and northern Indiana.

Collected by A. C. Weed and L. L. Walters:

73 specimens of reptiles and frogs—Chicago.

Prepared by L. L. Walters

Celluloid models of 1 turtle, 4 snakes and 2 frogs—Chicago.

Purchases:

4 specimens of Cory's shearwater—Island of Pico, Azores.

125 specimens of frogs—Minnesota.

24 specimens of fishes—Chicago.

FRENCH, G. H., Carbondale, Ill.

1 moth—Carbondale, Ill. (gift).

FRIESSER, J., Chicago.

1 cicada, 1 fly—Chicago (gift).

GEILHUFF, FRED, Chicago.

1 centipede—Chicago (gift).

GERHARD, WM. J., Chicago.

376 dragonflies, grasshoppers, bugs, butterflies, moths, beetles, flies, bees, wasps and parasites—northern Indiana and northern Illinois (gift).

GREENLEE, MRS. R. S., Chicago.

1 hawk's-bill turtle (gift).

GUERET, E. N., Chicago.

5 moths—Chicago (gift).

GUNDER, J. D., Chicago.

1 hemerobian—Yellowstone National Park (gift).

HADA, STEPHEN, Chicago.

1 lake herring—Chicago (gift).

HAREBO, MRS. J. F., New Lisbon, Wisconsin.

1 blue-tailed skink—New Lisbon, Wisconsin (gift).

HOUGAARD, MRS. C. S., Elmwood Park, Illinois.

1 spider—Elmwood Park, Illinois (gift).

KAEMPFFER, FRED, Chicago.

1 black tamarin marmoset (gift).

KNOFF, EZRA C., Avalon, California.

1 butterfly, 5 moths—Avalon, California (gift).

LANGTRY, J. C., Chicago.

1 pair elk horns (gift).

LILJEBLAD, E., Chicago.

18 dragonflies, ant-lions, bugs, beetles, flies, wasps and parasites—northern Illinois and northern Indiana (gift).

LOMEN, CARL J., Seattle, Washington.

1 golden eagle—Alaska (gift).

MASON, J. A., Chicago.

1 young hognosed snake—Waverly Beach, Indiana (gift).

NARBO, DR. SVEN, Stavanger, Norway.

3 bird's eggs—Norway (gift).

47 dragonflies, bugs, butterflies, flies, bees, parasites, beetles and moths—Norway (gift).

23 beetles, caddice-flies, butterflies and moths—Norway (gift).

35 shells—Norway (gift).

OSGOOD, W. H., Chicago.

35 mammals—Nebraska (gift).

PRET, FRED N., Chicago.

1 small mouth bass—Alma, Wisconsin (gift).

POLZIN, GEO. P., Edison, California.

1 scorpion—Edison, California (gift).

PORTER, A. F., Decorah, Iowa.

1 katydid, 2 mantis, 1 ant-lion, 1

- milliped, 1 beetle, 6 bees and parasites—Africa and Florida (gift).
- TSOTA, DR. F. J., Chicago.**
1 rapidian, 2 dobsons—California (gift).
- REYNOLDS, M. K., Marquette, Michigan.**
1 rainbow trout—Marquette, Michigan (gift).
- ROMANO, JOE, Chicago.**
1 moth—Chicago (gift).
- ROTHSCHILD'S AQUARIUM, Chicago.**
3 fishes (gift).
2 shovelnose sturgeons—Bellevue, Iowa (gift).
- ROWE, KATHERINE, ESTATE OF, Chicago.**
54 mounted birds (bequest).
4 mounted small mammals (bequest).
- SCHWARZ, E., St. Louis, Missouri.**
2 moths—St. Louis, Missouri (gift).
- SELINGER, CARL, Chicago.**
3 chrysalids—northern Illinois (gift).
- SHEWSKI, LEO, Bass Lake, Indiana.**
1 rough-legged hawk—Bass Lake, Indiana (gift).
- SHELDON, MARK, New York.**
1emu skin (gift).
- SMITH, MRS. LYDIA, North Rose, New York.**
1 ribbon snake—North Rose, New York (gift).
- SUGDEN, J. H., Salt Lake City, Utah.**
6 mountain crickets—Rexburg, Idaho (gift).
- TARRANT, ROBERT, Chicago.**
1 ring-tailed bassariscus (gift).
- WALTERS, L. L., Chicago.**
1 common garter snake, 3 cricket frogs—Indiana (gift).
- WEED, A. C., Chicago.**
1 moth, 1 centipede—northern Illinois (gift).
17 fishes—(gift).
Set of four eggs of marsh hawk—North Rose, New York (gift).
- WILLIAMSON, E. B., Bluffton, Indiana.**
1 Hungarian partridge (gift).
- WILLIAMSON, J. H., Bluffton, Indiana.**
131 dragonflies—Florida and South Carolina (gift).
- WOLCOTT, A. B., Chicago.**
2 bugs—Hessville, Indiana (gift).
- WOODHAMS, CLEO, North Rose, New York.**
1 large garter snake, 40 young water snakes—North Rose, New York (gift).

SECTION OF PHOTOGRAPHY

- WINTERNITZ, M. L., Chicago.**
100 prints—Seminole and Burma, India (gift).
- FIELD MUSEUM OF NATURAL HISTORY.**
Made by Section:
395 negatives, 1,672 prints.
- GLASIER, FRED E., Brockton, Massachusetts.**
9 colored reproductions of American Indiana.

THE LIBRARY

LIST OF DONORS AND EXCHANGES

(Accessions are by exchange, unless otherwise designated)

AFRICA:

- Albany Museum.
Durban Museum.
East Africa and Uganda Natural History Society, Nairobi.
- Geological Society, Johannesburg.
Geological Survey, Cairo.
Government of Uganda Protectorate
Institut d'Egypte, Cairo.
Institut de Carthage, Tunis.



SOFT-SHELLED TURTLE.
Celluloid reproduction by L. L. Walters.

Royal Society of South Africa, Cape Town.

South African Association for Advancement of Science, Cape Town.

South African Department of Agriculture, Pretoria.

South African Museum, Cape Town.

Transvaal Museum, Pretoria.

Zoological Gardens of Ghizeh, Cairo.

ARGENTINA:

Museo de la Plata, Buenos Aires.
Sociedad Ornitológica del Plata, Buenos Aires.

AUSTRALIA:

Australian Museum, Sydney.
Botanic Gardens and Government Domain, Sydney.

Commonwealth of Australia, Adelaide.

Department of Agriculture, Adelaide.

Department of Agriculture, Sydney.

Department of Agriculture, Wellington.

Department of Mines, Sydney.

Field Naturalists' Club, Melbourne.

Fish Commission of New South Wales, Sydney.

Forestry Commission, Sydney (gift).

Geological Survey of Western Australia, Perth.

Institute of Science and Industry, Sydney.

Linnean Society of New South Wales, Sydney.

Melbourne University.

National Herbarium, Melbourne.

National Herbarium, South Yarra.

Parliament of the Commonwealth, Sydney.

Public Library, Museum and Art Gallery, Adelaide.

Public Library, Museum and National Gallery of Victoria, Melbourne.

Queensland Museum, Brisbane.

Royal Geographical Society of Australasia, Brisbane.

Royal Society of New South Wales, Sydney.

Royal Society of South Australia, Adelaide.

Royal Society of Tasmania, Hobart.

Royal Society of Victoria, Melbourne.

Royal Society of Western Australia, Perth.

South Australian Ornithological Society, Adelaide.

Technological Museum of New South Wales, Sydney.

Victoria Department of Agriculture, Melbourne.

Western Australia, Geological Survey, Perth.

AUSTRIA:

Anthropologische Gesellschaft in Wien.

K. K. Naturhistorisches Museum, Vienna.

K. K. Zoologisch-Botanische Gesellschaft, Vienna.

BELGIUM:

Académie Royale de Belgique, Brussels.

Institut Botanique Leo Errera, Brussels.

Jardin Botanique de l'Etat, Brussels.

Musée Royale d'Histoire Naturelle, Brussels.

Société Royale d'Archéologie, Brussels.

Société Royale de Botanique, Brussels.

Société Royale des Sciences, Liège.

BRAZIL:

Biblioteca Nacional, Rio de Janeiro.

Escola Superior de Agricultura e Medicina, Veterinária, Rio de Janeiro.

Instituto Agronomico de Estado, São Paulo.

Museu Nacional, Rio de Janeiro.

CANADA:

Chief Game Guardian of Saskatchewan, Regina.

Commission of Conservation, Ottawa.

Department of Agriculture, Ottawa.

Department of Agriculture of Ontario, Toronto.

Department of Marine and Fisheries, Ottawa.

Department of Mines, Ottawa.

Department of the Interior, Geological Survey, Ottawa.

Ontario Minister of Education, Toronto.

Provincial Museum, Toronto.

Provincial Museum, Victoria.

Royal Canadian Institute, Toronto.

Royal Society of Canada, Ottawa.

Société de Géographie, Québec.

University of Toronto.

BULGARIA:

Musée Ethnographique National, Sofia.

CEYLON:

Colombo Museum.

CHILE:Museo de Etnologia y Antropologia
de Chile, Santiago de Chile.**CHINA:**Botany and Forestry Department,
Hong-Kong.
Canton Christian College (gift).
Royal Asiatic Society of North
China, Shanghai.**CZECHO-SLOVAKIA:**Deutscher Naturwissenschaftlich-
Medizinischer Verein für Böhmen
"Lotos," Prag.**DENMARK:**Anthropologiske Komité, Copen-
hagen.
Botanical Garden, Library, Copen-
hagen.
Danske Kunstindustrimuseum, Copen-
hagen.
Mineralogical Museum, Copenhagen.
Naturhistorisk Forening, Copen-
hagen.
Société Botanique, Copenhagen.**ECUADOR:**Sociedad Ecuatoriana de Estudios
Historicos Americanos, Quito.**FEDERATED MALAY STATES:**Federated Malay States Museum,
Kuala Lumpur.**FUJI ISLANDS:**

Fijian Society, Suva.

FINLAND:Abo Akademi.
Finnish Archaeological Society,
Helsingfors.**FRANCE:**Académie des Sciences, Paris.
Ecole d'Anthropologie, Paris.
Musée d'Histoire Naturelle, Mar-
seille.
Musée d'Histoire Naturelle,
Lausanne.
Muséum d'Histoire Naturelle, Lyons.
Musée Guimet, Paris.
Muséum National d'Histoire
Naturelle, Paris.
La Nature, Paris.
Société d'Etudes Scientifiques
Angers.
Société d'Etudes Scientifiques,
Naturelles, Reims.
Société d'Histoire Naturelle, Colmar.Société d'Horticulture, Paris.
Société de Géographie, Paris.
Société de Géographie, Toulouse.
Société des Américanistes, Paris.
Société des Sciences de Nancy.
Société des Sciences Naturelles du
Saône et Loire, Chalon-sur-Saône.
Société Géologique du Nord, Lille.
Société Linnéenne, Bordeaux.
Société Nationale d'Agriculture,
Sciences et Arts, Angers.
Université de Rennes.**GERMANY:**Bayerische Akademie der Wissen-
schaften, Munich.
Botanischer Verein der Provinz
Brandenburg, Berlin.
Deutsche Dendrologische Gesell-
schaft, Bonn-Poppelsdorf.
Deutsche Geologische Gesellschaft,
Stuttgart.
Deutsche Gesellschaft für Anthro-
pologie, Ethnologie und Urge-
schichte, Berlin.
Deutsche Morganländische Gesell-
schaft, Leipzig.
Deutscher Seefischerei Verein, Berlin.
Deutscher Universität, Berlin.
Deutsches Entomologisches Institut,
Berlin.
Georg August Universität, Göttin-
gen.
Geographische Gesellschaft, Ham-
burg.
Geographische Gesellschaft, Munich.
Gesellschaft für Erdkunde, Berlin.
K. Museum für Volkskunde, Berlin.
K. Preussische Akademie der Wis-
senschaften, Berlin.
K. Universitäts Bibliothek, Marburg.
K. Universitäts Bibliothek, Munich.
K. Universitäts Bibliothek, Tübingen.
K. Zoologisches Museum, Berlin.
Museum für Völkerkunde, Hamburg.
Nassauischer Verein für Natur-
kunde, Wiesbaden.
Naturforschende Gesellschaft, Göt-
tingen.
Naturhistorische Gesellschaft, Han-
nover.
Naturhistorischer Verein, Bonn.
Naturwissenschaftliche Gesellschaft,
Dresden.
Ornithologische Gesellschaft in
Bayern, Munich.
Thüringischer Botanischer Verein,
Weimar.
Universitäts Bibliothek, Giessen.
Verein für Vaterländische Natur-
kunde in Württemberg, Stuttgart.

Verein für Erdkunde, Darmstadt.
Zoologisches Museum, Hamburg.

GREAT BRITAIN:

Birmingham Natural History and Philosophical Society.
Brighton and Hove Natural History and Philosophical Society, Brighton.
Bristol Museum and Gallery.
British Museum (Natural History), London.
Cambridge Antiquarian Society.
Cambridge Philosophical Society.
Cambridge University Library.
Cardiff Naturalists' Society.
Dove Marine Laboratory, Cullercoats.
Fisheries Board, Edinburgh.
Geological Society, Edinburgh.
Geological Survey, Edinburgh.
Great Britain Geological Survey, London.
Hull Municipal Museum.
Imperial Bureau of Entomology, London.
Imperial College of Science and Technology, London.
Institute of Oriental Studies, London.
Japan Society of London.
Lancashire Sea Fisheries Laboratories, Liverpool.
Linnean Society of London.
Liverpool Biological Society, London Library.
Manchester Literary and Philosophical Society.
Manchester Museum.
National Museum, Cardiff.
Natural History and Philosophical Society, Croydon.
Oxford University Museum.
Perthshire Society of Natural Science, Perth.
Royal Anthropological Institute of Great Britain and Ireland, London.
Royal Botanic Gardens, Edinburgh.
Royal Botanic Gardens, Kew.
Royal Colonial Institute, London.
Royal Cornwall Polytechnic Society, Falmouth.
Royal Geographical Society, London.
Royal Horticultural Society, London.
Royal Scottish Museum, Edinburgh.
Royal Society, London.
Royal Society of Arts, London.
Royal Society of Edinburgh.
South London Entomological and Natural History Society.
Tring Zoological Museum.
Victoria and Albert Museum, London.

Wellcome Chemical Research Laboratories, London.
Zoological Society of London.

HUNGARY:

Magyar Természettudományi Társulat, Budapest.
Museum Nationale Hungaricum, Budapest.

INDIA:

Anthropological Society, Bombay.
Archaeological Survey, Allahabad.
Archaeological Survey, Bombay.
Archaeological Survey, Calcutta.
Archaeological Survey, Eastern Circle, Patna.
Archaeological Survey, Frontier Circle, Peshawar.
Archaeological Survey Department, Madras.
Archaeological Survey of Burma, Lahore.
Department of Agriculture, Bombay.
Department of Agriculture, Madras.
Department of Agriculture, Pusa.
Geological Survey, Calcutta.
Government, Calcutta.
Government Cinchona Plantation, Calcutta.
Government Museum, Madras.
Indian Museum, Calcutta.
Journal of Indian Botany.
National Indian Association, Calcutta (gift).
Raffles Museum and Library, Singapore.
Superintendent of Archaeology H. E. H. Nizam's Dominions, Hyderabad.
Superintendent of Archaeological Survey, Hindu and Buddhist Monuments, Lahore.
University of Calcutta.

IRELAND:

Belfast Naturalists' Field Club.
Natural History and Philosophical Society, Belfast.
Royal Irish Academy, Dublin.

ITALY:

Accademia delle Scienze Fisiche e Matematiche, Naples.
Istituto Botanico, Milan.
Istituto Geografico de Agostini, Novara.
Laboratorio de Zoologia Generale e Agraria, Portici.
R. Società Geografica Italiana, Rome.
Società Italiana d'Antropologia e Etnologia, Florence.

Società Italiana di Scienze Naturali,
Milan.

Società Romana di Antropologia,
Rome.

Società Toscana di Scienze Naturali,
Pisa.

University of Naples.

JAPAN:

Bureau of Productive Industry
Formosa Government, Taihoku.

Educational Museum, Tokyo.

Geological Society, Tokyo.

Imperial University of Tokyo.

College of Science.

Ornithological Society, Tokyo.

Tokyo Botanical Society.

Yamato Society, Tokyo.

JAVA:

Bataviaasch Genootschap van Kunsten
en Wetenschappen, Batavia.

Department of Agriculture, Buitenzorg.

Encyclopaedisch Bureau, Weltevreden.

Jardin Botanique, Buitenzorg.

K. Natuurkundige Vereeniging in
Nederlandsch-Indië, Weltevreden.

MEXICO:

Instituto Geológico, Mexico.

Sociedad Científica "Antonio
Alzate," Mexico.

NETHERLANDS:

R. Akademie van Wetenschappen,
Amsterdam.

K. Instituut voor de Taal-Land-en
Volkenkunde van Nederlandsch
Indië, The Hague.

K. Nederlandsch Aardrijkundig
Genootschap, Amsterdam.

Ministry of Agriculture, Industry
and Commerce, The Hague.

Museum voor Land-en Volkenkunde
en Maritiem Museum "Prins
Hendrik," Rotterdam.

Nederlandsche Dierkunde Vereenig-
ing, Leiden.

Rijks Ethnographisch Museum,
Leiden.

Rijks Herbarium, Leiden.

Rijks Hogere Land-Tuin-en Bosch-
bouwschool, Wageningen.

Rijks Museum van Natuurlijke
Historie, Leiden.

University of Otago, Dunedin.

NEW ZEALAND:

Acclimatization Society, Wellington.
Auckland Institute and Museum,
Wellington.

Department of Agriculture, Wellington.

Department of Mines, Wellington.
New Zealand Institute, Wellington.

NORWAY:

Bergen Museum.

Norges Geologiske Undersøgelse,
Christiania.

Nyt magasin för Naturviden-
skaberne, Christiania.

Tromsø Museum.

PERU:

Archivo Nacional, Lima.

Biblioteca Nacional, Lima.

Cuerpo de Ingenieros de Minas,
Lima.

Instituto Historico, Lima.

Sociedad Geografica de Lima.

POLAND:

Muzei Polonici Historiae Naturales,
Warsaw.

PORTUGAL:

Biblioteca Nacional, Lisbon.

SPAIN:

Collegio de Pasaje, La Guardia.

Institució Catalana d'Historia
Natural, Barcelona.

Instituto General y Tecnico,
Valencia.

Junta de Ciencias Naturales, Barce-
lona.

Laboratorio de Hidrobiologia
Española, Valencia.

Museo Nacional de Ciencias
Naturales, Madrid.

R. Academia de Ciencias y Artes,
Barcelona.

R. Academia de Ciencias Exactas,
Físicas y Naturales, Madrid.

Sociedad Española de Historia
Natural, Madrid.

SWEDEN:

Botaniska Notiser, Lund.

K. Biblioteket, Stockholm.

K. Svenska Vetenskapsakademien,
Stockholm.

K. Vitterhets Historie och Antik-
vitets Akademien, Stockholm.

Lunds Universitet.

Svenska Sällskapet för Antropologi
och Geografi, Stockholm.

SWITZERLAND:

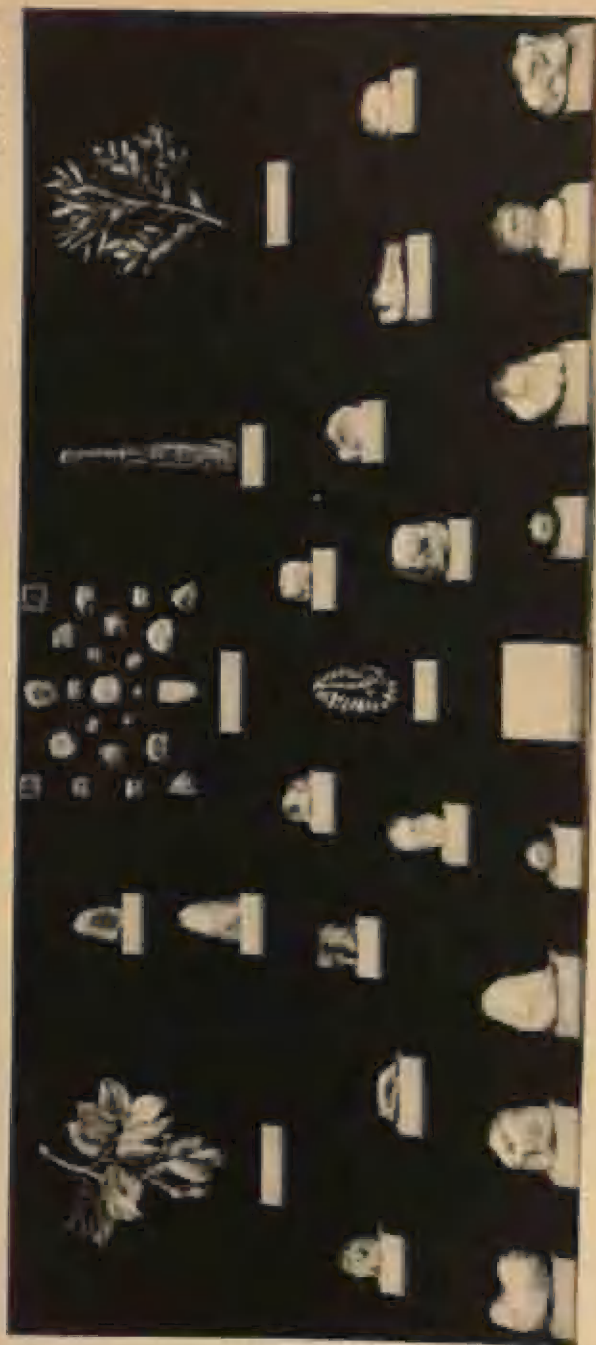
Botanic Garden, Zürich.

Geographisch-Ethnographische Ge-
sellschaft, Zürich.

Historisches Museum, Bern.

Musée Ethnographique, Neuchâtel.





AMBER AND AMBER-LIKE RESINS.
Case 9, Stanley Field Hall.

Naturforschende Gesellschaft, Bern.
Naturforschende Gesellschaft,
Zürich.

Ostschweizerische Geograph.-Com-
mercielle Gesellschaft, St. Gallen.
Schweizerische Naturforschende Ge-
sellschaft, Bern.

Société de Physique et Histoire
Naturelle, Geneva.
Société Entomologique, Bern.
Société Fribourgeoise des Sciences
Naturelles, Fribourg.

URUGUAY:

Archivo General Administrativo,
Montevideo (gift).
Museo de Historia Natural, Monte-
video.

WEST INDIES:

Academia Nacional de Artes y
Letras, Havana.
Agricultural Experiment Station,
Puerto Rico.
Biblioteca Nacional, Havana.
Imperial Department of Agriculture,
Barbados.
Trinidad and Tobago Department of
Agriculture, Port of Spain.
Universidad de Habana.

Carpenter, G. H., Dublin.
Chodat, R., Geneva.
Chrostowski, Tadeusz, Warsaw.
Dabene, Roberto, Buenos Aires.
Dunod, H., Paris.
Gamble, J. S., London (gift).
Gennep, Arnold van, Paris.
Granddier, M. G., Paris.
Hartland, E., Sydney, Gloucester,
England.

Hommel, Fritz, Munich (gift).
Huard, V. A., Quebec.
Janet, Charles, Paris.
Malinowski, Bronislaw.
Martelli, U., Florence.
Pospisil, Frantisek, Warsaw.
Preuss, K., Berlin.
Rivet, P., Paris.
Riotot, A., Brussels.
Santos, José Dea, Porto (gift).
Schlagintausen, Otto, Zürich (gift).
Schmidt, W., Mödling.
Ström, Kaare Munster, Christiania
(gift).

Vischer, Wilhelm, Basel (gift).
Zimanyi, Károly, Budapest.

ALABAMA:

Agriculture Experiment Station,
Auburn.
Alabama Geological Survey,
University.

Atlanta University of Natural
History, University.
Anthropological Society,
Montgomery.
Department of Game and Fish,
Montgomery.

ARIZONA:

Agricultural Experiment Station,
Tucson.
University of Arizona, Tucson.

CALIFORNIA:

Agricultural Experiment Station,
Berkeley.
California Academy of Sciences, San
Francisco.
Cooper Ornithological Club, Holly-
wood.
Fish and Game Commission, San
Francisco.
Leland Stanford Junior University,
Stanford University.
Pomona College, Claremont.
San Diego Society of Natural
History.
Scripps Institution of Biological
Research, La Jolla.
Southwest Museum, Los Angeles.
State Board of Forestry, Sacra-
mento.
State Mining Bureau, Sacramento.
University of California, Berkeley.

COLORADO:

Bureau of Mines, Denver.
Colorado College, Colorado Springs.
Colorado Museum of Natural His-
tory, Denver.
Geological Survey, Boulder.
State Historical and Natural History
Society, Denver.

CONNECTICUT:

Agricultural Experiment Station,
New Haven.
American Oriental Society, New
Haven.
Connecticut Academy of Arts and
Sciences, New Haven.
Forestry Association, Hartford.
Hartford Public Library.
Pembury Museum, New Haven.
State Geological and Natural History
Survey, New Haven.
Wesleyan University, Middletown.
Yale University, New Haven.

DELAWARE:

Agricultural Experiment Station,
Newark.
Hercules Powder Company, Wil-
mington.

FLORIDA:

Florida Geological Survey, Tallahassee.

GEORGIA:

Geological Survey, Atlanta.

HAWAII:

Agricultural Experiment Station, Honolulu.

Bernice Pauahi Bishop Museum, Honolulu.

Board of Commissions of Agriculture and Forestry, Honolulu.

Hawaiian College, Honolulu.

Hawaiian Historical Society, Honolulu.

Sugar Planters' Association, Honolulu.

IDAHO:

University of Idaho, Moscow.

ILLINOIS:

Agricultural Experiment Station, Urbana.

Art Institute of Chicago.

Audubon Society, Chicago.

Board of Education, Chicago.

Chicago Public Library.

Division of Natural History Survey, Urbana.

Geographic Society of Chicago (gift).

Hardwood Record, Chicago (gift).

John Crerar Library, Chicago.

Lake Forest College.

Newberry Library, Chicago.

Northwestern University, Evanston.

Open Court Publishing Company, Chicago.

State Academy of Science, Springfield.

State Board of Agriculture, Springfield.

State Historical Library, Springfield.

State Water Survey, Urbana.

Superintendent of Public Instruction, Springfield.

Sweet, Wallach and Company, Chicago (gift).

University of Chicago.

University of Illinois, Urbana.

INDIANA:

Academy of Science, Indianapolis.

Agricultural Experiment Station, Lafayette.

Department of Conservation, Indianapolis.

Purdue University, Lafayette.

University of Notre Dame.

IOWA:

Historical Department of Iowa, Des Moines.

Iowa State College, Ames.

University of Iowa, Iowa City.

KANSAS:

Academy of Science, Topeka.

Agricultural Experiment Station, Manhattan.

Kansas Historical Society, Topeka.

State Board of Agriculture, Topeka.

KENTUCKY:

Agricultural Experiment Station, Louisville.

Department of Geology and Forestry, Frankfort.

LOUISIANA:

Agricultural Experiment Station, Baton Rouge.

Department of Conservation, New Orleans.

MAINE:

Agricultural Experiment Station, Orono.

Bowdoin College, Brunswick.

Department State Lands and Forestry, Augusta.

Portland Public Library.

MARYLAND:

Agricultural Experiment Station, College Park.

Enoch Pratt Free Library, Baltimore.

Johns Hopkins University, Baltimore.

MASSACHUSETTS:

Agricultural Experiment Station, Amherst.

American Academy of Arts and Sciences, Boston.

American Antiquarian Society, Worcester.

Boston Public Library.

Boston Society of Natural History.

Clark University, Worcester.

Essex Institute, Salem.

Harvard College, Museum of Comparative Zoology, Cambridge.

Harvard University, Arnold Arboretum, Jamaica Plain.

Harvard University, Gray Herbarium, Cambridge.

Museum of Fine Arts, Boston.

New Bedford Free Public Library.

Peabody Institute.

Peabody Museum, Cambridge.

Peabody Museum, Salem.

Salem Public Library.

Springfield City Library Association.

Springfield Natural History Museum.
Tufts College.
Williams College, Williamstown.

MICHIGAN:

Academy of Sciences, Ann Arbor.
Agricultural Experiment Station,
Agricultural College.
Detroit Institute of Art.
Geological and Natural History
Survey, Lansing.
Grand Rapids Public Library.
Michigan College of Mines, Hough-
ton.
Michigan State Library, Lansing.
State Board of Agriculture, Lansing.
State Board of Library Commissions,
Lansing.
University of Michigan, Ann Arbor.

MINNESOTA:

Agricultural Experiment Station,
Saint Paul.
Minneapolis Institute of Arts.
Minnesota Historical Society, Saint
Paul.
State Entomologist, Saint Paul.
University of Minnesota, Minneapolis.

MISSISSIPPI:

Agricultural Experiment Station,
Agricultural College.
State Geological Survey, Jackson
(gift).

MISSOURI:

Agricultural Experiment Station,
Columbia.
City Art Museum, Saint Louis.
Missouri Botanical Garden, Saint
Louis.
Missouri Historical Society, Colum-
bia.
Saint Louis Academy of Sciences.
Saint Louis Public Library.
Saint Louis University.
Washington University, Saint Louis.

MONTANA:

State Forester, Helena (gift).
University of Montana, Missoula.

NEBRASKA:

Agricultural Experiment Station,
Lincoln.
Geological Survey, Lincoln.
University of Nebraska, Lincoln.

NEVADA:

Agricultural Experiment Station,
Carson City.

NEW JERSEY:

Agricultural Experiment Station,
Trenton.

Department of Conservation and
Development, Trenton.
Department of Plant Pathology,
Trenton.
Geological Survey, Trenton.
Newark Museums Association.
Princeton University.
Stevens Institute, Hoboken.

NEW MEXICO:

New Mexico Historical Society,
Santa Fe.
New Mexico Museum, Santa Fe.

NEW YORK:

Agricultural Experiment Station,
Geneva.
American Academy in Rome, New
York City.
American Geographical Society, New
York City.
American Institute of Mining En-
gineers, New York City.
American Museum of Natural
History, New York City.
Brooklyn Botanic Garden.
Brooklyn Institute of Arts and
Sciences.
Carnegie Foundation for the Ad-
vancement of Teaching, New York
City (gift).
Conservation Commission, Albany.
Cooper Union for the Advancement
of Science and Art, New York
City.
Cornell University, Ithaca.
Forest and Stream Publishing Com-
pany, New York City.
Inter-American Magazine, New
York City (gift).
Japan Society, New York City.
Metropolitan Museum of Art, New
York City.
Museum of the American Indian,
New York City.
New York Academy of Sciences,
New York City.
New York Botanical Garden, New
York City.
New York Historical Society, New
York City.
New York Times, New York City,
(gift).
Pratt Institute Free Library, New
York City.
Public Library, New York City.
Rockefeller Foundation, New York
City.
State College of Forestry, Syracuse.
State Library, Albany.
State Museum, Albany.
Statens Island Institute of Arts and

Sciences, New York City.
 Stone Publishing Company, New
 York City.
 University of the State of New
 York, Albany.
 Zoological Society, New York City.

NORTH CAROLINA:

Elisha Mitchell Scientific Society,
 Chapel Hill.
 Geological and Economic Survey,
 Raleigh.

NORTH DAKOTA:

State Historical Society of North
 Dakota, Bismarck.
 University of North Dakota, Uni-
 versity.

OHIO:

Academy of Science, Columbus.
 Agricultural Experiment Station,
 Wooster.
 Cincinnati Museum Association.
 Cleveland Museum of Art.
 Denison University, Granville.
 Geological Survey, Columbus.
 State Archaeological and Historical
 Society, Columbus.
 State University, Columbus.
 University of Cincinnati.
 Western Reserve Historical Society,
 Cleveland.
 Wilson Ornithological Club, Ober-
 lin.

OKLAHOMA:

Geological Survey, Norman.
 Oklahoma Historical Society, Okla-
 homa City.

OREGON:

Agricultural Experiment Station,
 Corvallis.
 University of Oregon, Eugene.

PENNSYLVANIA:

American Philosophical Society,
 Philadelphia.
 Association of Engineering Societies,
 Philadelphia.
 Bryn Mawr College.
 Carnegie Institute, Pittsburgh.
 Carnegie Library, Pittsburgh.
 Carnegie Museum, Pittsburgh.
 Delaware County Institute of
 Science, Media.
 Drexel College, Philadelphia.
 Engineers' Society of Western
 Pennsylvania, Pittsburgh.
 Franklin Institute, Philadelphia.

Macbeth-Evans Glass Company,
 Pittsburgh (gift).
 Numismatic and Antiquarian Society,
 Philadelphia.
 Pennsylvania Museum and School of
 Industrial Art, Philadelphia.
 Philadelphia Academy of Natural
 Sciences.
 Philadelphia College of Pharmacy.
 Philadelphia Commercial Museum.
 Sullivant Moss Society, Pittsburgh.
 University of Pennsylvania, Phila-
 delphia.
 University of Pennsylvania Museum,
 Philadelphia.
 Wagner Free Institute of Science,
 Philadelphia.
 Wyoming Historical and Geological
 Society, Wilkes-Barre.

PHILIPPINE ISLANDS:

Bureau of Education, Manila.
 Department of Agriculture, Manila.
 Department of Interior, Bureau of
 Science, Manila.

RHODE ISLAND:

Park Museum, Providence.

SOUTH CAROLINA:

Charleston Museum.

SOUTH DAKOTA:

Agricultural Experiment Station,
 Brookings.
 Geological and Natural History
 Survey, Vermilion.
 South Dakota School of Mines,
 Rapid City.

TEXAS:

Agricultural Experiment Station,
 College Station.
 Scientific Society of San Antonio.
 University of Texas, Austin.

VERMONT:

State Geologist, Burlington.

VIRGINIA:

State Library, Richmond.
 University of Virginia, Charlottes-
 ville.
 Virginia Geological Survey, Char-
 lottesville.

WASHINGTON:

Washington University, Seattle.
 Washington University, Historical
 Society, Seattle.

WASHINGTON, D. C.:

American Mining Congress.
 Argentine Ambassador.





LIFE-SIZE FIGURE OF JAPANESE WOMAN IN STREET COSTUME, FRONT AND BACK.
Face and Hands Cast from Life by J. G. Prashin, Modeler in Department of Anthropology.

Carnegie Institution of Washington.
Library of Congress.
National Academy of Sciences.
National Education Association
(gift).
National Zoological Park.
Pan American Union.
United States Government.

WISCONSIN:

Wisconsin Experiment Station,
Madison.
Beloit College.
Geological and Natural History
Survey, Madison.
University of Wisconsin, Madison.

Ayer, Edward E., Chicago (gift).
Baker, Frank C., Urbana.
Barnes, William, Decatur.
Bascom, Florence, Bryn Mawr (gift).
Brandegee, Townsend S., Berkeley.
Britton, Nathaniel L., New York.
Buah, Benjamin F., (gift).
Clarke, Thomas H., Cambridge (gift).
Davies, D. C., Chicago (gift).
Farwell, Oliver A., Detroit (gift).
Field, Richard M., Jamaica Plain
(gift).
Field, Stanley, Chicago (gift).
Gerhard, W. J., Chicago (gift).
Hankinson, T. L., Ypsilanti (gift).

Hanson, Herbert C., (gift).
Hoyt, F. W., New York (gift).
Hubbs, Carl L., Ann Arbor (gift).
Jones, L. R., Madison.
Kendall, William C., Washington, D.C.
Lanfer, Berthold, Chicago (gift).
Manning, Warren H., North Bellerica
(gift).
Millsbaugh, Charles F., Chicago.
Morse, Edward S., Salem.
Osborn, Henry Fairfield, New York
City.
Osgood, Willfred H., Chicago (gift).
Parshley, H. M., Northampton.
Pennell, Francis W., New York City.
Penrose, R. A. F., Philadelphia.
Rostovtzeff, M., Madison.
Rumsey, Winnie, Lake Forest (gift).
Schmidt, Karl P., New York City
(gift).
Small, John K., New York City (gift).
Speck, Frank G., Philadelphia (gift).
Springer, Frank, Las Vegas.
Starr, Frederick, Chicago.
Todd, W. E. Clyde, Pittsburgh.
Tompkins-Kiel Marble Company, New
York City (gift).
Trelease, William, Urbana.
Woods, George, Chicago (gift).

ARTICLES OF INCORPORATION.

STATE OF ILLINOIS.

DEPARTMENT OF STATE

WILLIAM H. HINRICHSEN, *Secretary of State.*

TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETING:

Whereas, a Certificate duly signed and acknowledged having been filed in the office of the Secretary of State, on the 16th day of September, A. D. 1893, for the organization of the COLUMBIAN MUSEUM OF CHICAGO, under and in accordance with the provisions of "An Act Concerning Corporations," approved April 18, 1872, and in force July 1, 1872, and all acts amendatory thereof, a copy of which certificate is hereto attached.

Now, therefore, I, William H. Hinrichsen, Secretary of State of the State of Illinois, by virtue of the powers and duties vested in me by law, do hereby certify that the said COLUMBIAN MUSEUM OF CHICAGO is a legally organized Corporation under the laws of this State.

In Testimony Whereof, I hereto set my hand and cause to be affixed the Great Seal of State. Done at the City of Springfield, this 16th day of September, in the year of our Lord one thousand eight hundred and ninety-three, and of the Independence of the United States the one hundred and eighteenth.

W. H. HINRICHSEN,

[SEAL]

Secretary of State.

TO HON. WILLIAM H. HINRICHSEN,

SECRETARY OF STATE:

SIR:

We, the undersigned citizens of the United States, propose to form a corporation under an act of the General Assembly of the State of Illinois, entitled "An Act Concerning Corporations," approved April 18, 1872, and all acts amendatory thereof; and that for the purposes of such organization we hereby state as follows, to-wit:

1. The name of such corporation is the "COLUMBIAN MUSEUM OF CHICAGO."

2. The object for which it is formed is for the accumulation and dissemination of knowledge, and the preservation and exhibition of objects illustrating Art, Archaeology, Science and History.

3. The management of the aforesaid museum shall be vested in a Board of FIFTEEN (15) TRUSTEES, five of whom are to be elected every year.

4. The following named persons are hereby selected as the Trustees for the first year of its corporate existence:

Edward E. Ayer, Charles B. Farwell, George E. Adams, George R. Davis, Charles L. Hutchinson, Daniel H. Burnham, John A. Roche, M. C. Bullock, Emil G. Hirsch, James W. Ellsworth, Allison V. Armour, O. F. Aldis, Edwin Walker, John C. Black and Frank W. Gunsaulus.

5. The location of the Museum is in the City of Chicago, County of Cook, and State of Illinois.

(Signed),

George E. Adams, C. B. Farwell, Sidney C. Eastman, F. W. Putnam, Robert McCurdy, Andrew Peterson, L. J. Gage, Charles L. Hutchinson, Ebenezer Buckingham, Andrew McNally, Edward E. Ayer, John M. Clark, Herman H. Kohlhaas, George Schneider, Henry H. Getty, William R. Harper, Franklin H. Head, E. G. Keith, J. Irving Pearce, Axel F. Hatch, Henry Wade Rogers, Thomas B. Bryan, L. Z. Leiter, A. C. Bartlett, A. A. Sprague, A. C. McClurg, James W. Scott, Geo. F. Blasell, John R. Walsh, Chas. Fitzsimmons, John A. Roche, E. B. McCagg, Owen F. Aldis, Ferdinand W. Peck, James H. Dole, Joseph Stuckton, Edward B. Butler, John McConnell, R. A. Waller, H. C. Chatfield-Taylor, A. Crawford, Wm. Sooty Smith, P. S. Peterson, John C. Black, Jno. J. Mitchell, C. F. Gunther, George R. Davis, Stephen A. Forbes, Robert W. Patterson, Jr., M. C. Bullock, Edwin Walker, George M. Pullman, William E. Curtis, James W. Ellsworth, William E. Hale, Wm. T. Baker, Martin A. Kyerson, Huntington W. Jackson, N. B. Ream, Norman Williams, Melville E. Stone, Bryan Lathrop, Eliphulet W. Blatchford, Philip D. Armour.

STATE OF ILLINOIS

ss.

COOK COUNTY

I, G. R. MITCHELL, a Notary Public in and for said County, do hereby certify that the foregoing petitioners personally appeared before me and acknowledged severally that they signed the foregoing petition as their free and voluntary act for the uses and purposes therein set forth.

Given under my hand and notarial seal this 14th day of September, 1893.

G. R. MITCHELL,

[SEAL]

NOTARY PUBLIC, COOK COUNTY, ILL.

CHANGE OF NAME.

Pursuant to a resolution passed at a meeting of the corporate members held the 25th day of June, 1894, the name of the COLUMBIAN MUSEUM was changed to FIELD COLUMBIAN MUSEUM. A certificate to this effect was filed June 26, 1894, in the office of the Secretary of State for Illinois.

CHANGE OF NAME.

Pursuant to a resolution passed at a meeting of the corporate members held the 8th day of November, 1905, the name of the FIELD COLUMBIAN MUSEUM was changed to FIELD MUSEUM OF NATURAL HISTORY. A certificate to this effect was filed November 10, 1905, in the office of the Secretary of State for Illinois.

CHANGE IN ARTICLE 3.

Pursuant to a resolution at a meeting of the corporate members held the 10th day of May, 1920, the management of FIELD MUSEUM OF NATURAL HISTORY shall be invested in a Board of TWENTY-ONE (21) TRUSTEES, who shall be elected in such manner and for such time and term of office as may be provided for by the By-Laws. A certificate to this effect was filed May 21, 1920, in the office of the Secretary of State for Illinois.

AMENDED BY-LAWS

(JANUARY 1, 1921.)

ARTICLE I.

MEMBERS

SECTION 1. Members shall be of seven classes, Corporate Members, Honorary Members, Patrons, Life Members, Associate Members, Sustaining Members, and Annual Members.

SECTION 2. The Corporate Members shall consist of the persons named in the articles of incorporation, and of such other persons as shall be chosen from time to time by the Board of Trustees at any of its meetings, upon the recommendation of the Executive Committee; provided, that such person named in the articles of incorporation shall, within ninety days from the adoption of these By-Laws, and persons hereafter chosen as Corporate Members shall, within ninety days of their election, pay into the treasury the sum of twenty (\$20.00) dollars or more. Corporate Members becoming Life Members, Patrons or Honorary Members shall be exempt from dues. Annual meetings of said Corporate Members shall be held at the same place and on the same day that the annual meeting of the Board of Trustees is held.

SECTION 3. Honorary Members shall be chosen by the Board from among persons who have rendered eminent service to science, and only upon unanimous nomination of the Executive Committee. They shall be exempt from all dues.

SECTION 4. Patrons shall be chosen by the Board upon recommendation of the Executive Committee from among persons who have rendered eminent service to the Museum. They shall be exempt from all dues, and, by virtue of their election as Patrons, shall also be Corporate Members.

SECTION 5. Any person paying into the treasury the sum of five hundred (\$500.00) dollars, at any one time, shall, upon the unanimous vote of the Board, become a Life Member. Life Members shall be exempt from all dues, and shall enjoy all the privileges and courtesies of the Museum that are accorded to members of the Board of Trustees.

SECTION 6. Any person paying into the treasury of the Museum the sum of one hundred (\$100.00) dollars, at any one time, shall upon the unanimous vote of the Board, become an Associate Member. Associate Members shall be entitled to: tickets admitting member and members of family, including non-resident home guests; all publications of the Museum, if so desired; reserved seats to all lectures and entertainments under the auspices of the Museum, provided reservation is requested in advance; and admission of holder of membership and accompanying party to all special exhibits and Museum functions day or evening.

SECTION 7. Sustaining Members shall consist of such persons as are selected from time to time by the Board of Trustees at any of its meetings, and who shall pay an annual fee of twenty-five (\$25.00) dollars, payable within thirty days after notice of election and within thirty days after each recurring annual date. This Sustaining Membership entitles the member to free admission for the member and family to Museum on any day and allows 25 admission coupons,





BULLFROG.
Celluloid reproduction by L. L. Walters.

which may be used by any one, the Annual Report and such other Museum documents or publications as may be requested in writing. When a Sustaining Member has paid the annual fee of \$25.00 for six years, such member shall be entitled to become an Associate Member.

SECTION 8. Annual Members shall consist of such persons as are selected from time to time by the Board of Trustees at any of its meetings, and who shall pay an annual fee of ten (\$10.00) dollars, payable within thirty days after each recurring annual date. An Annual Membership shall entitle the member to a card of admission for the member and family during all hours when the Museum is open to the public, and free admission for the member and family to all Museum lectures or entertainments. This membership will also entitle the holder to the courtesies of the membership privileges of every Museum of note in the United States and Canada, so long as the existing system of cooperative interchange of membership tickets shall be maintained, including tickets for any lectures given under the auspices of any of the Museums during a visit to the cities in which the cooperative museums are located.

ARTICLE II.

BOARD OF TRUSTEES.

SECTION 1. The Board of Trustees shall consist of twenty-one members. The respective members of the Board now in office, and those who shall hereafter be elected, shall hold office during life. Vacancies occurring in the Board shall be filled at a regular meeting of the Board, upon the nomination of the Executive Committee made at a preceding regular meeting of the Board, by a majority vote of the members of the Board present.

SECTION 2. Regular meetings of the Board shall be held monthly. Special meetings may be called at any time by the President, and shall be called by the Secretary upon the written request of three Trustees. Five Trustees shall constitute a quorum, except for the election of officers or the adoption of the Annual Budget, when seven Trustees shall be required, but meetings may be adjourned by any less number from day to day, or to a day fixed, previous to the next regular meeting.

SECTION 3. Reasonable written notice, designating the time and place of holding meetings, shall be given by the Secretary.

ARTICLE III.

HONORARY TRUSTEES.

SECTION 1. As a mark of respect, and in appreciation of services performed for the Institution, those Trustees who by reason of inability, on account of change of residence, or for other cause or from indisposition to serve longer in such capacity shall resign their place upon the Board, may be elected, by a majority of those present at any regular meeting of the Board, an Honorary Trustee for life. Such Honorary Trustee will receive notice of all meetings of the Board of Trustees, whether regular or special, and will be expected to be present at all such meetings and participate in the deliberations thereof, but an Honorary Trustee shall not have the right to vote.

ARTICLE IV.

OFFICERS.

SECTION 1. The officers shall be a President, a First Vice-President, a Second Vice-President, a Third Vice-President, a Secretary, an Assistant Secretary and a Treasurer. They shall be chosen by ballot by the Board of Trustees, a majority of those present and voting being necessary to elect. The President,

the First Vice-President, the Second Vice-President, and the Third Vice-President shall be chosen from among the members of the Board of Trustees. The meeting for the election of officers shall be held on the third Monday of January of each year, and shall be called the Annual Meeting.

SECTION 2. The officers shall hold office for one year, or until their successors are elected and qualified, but any officer may be removed at any regular meeting of the Board of Trustees by a vote of two-thirds of all the members of the Board. Vacancies in any office may be filled by the Board at any meeting.

SECTION 3. The officers shall perform such duties as ordinarily appertain to their respective offices, and such as shall be prescribed by the By-Laws, or designated from time to time by the Board of Trustees.

ARTICLE V.

THE TREASURER.

SECTION 1. The Treasurer shall be custodian of the funds of the Corporation except as hereinafter provided. He shall make disbursements only upon warrants drawn by the Director and countersigned by the President. In the absence or inability of the Director, warrants may be signed by the chairman of the Finance Committee, and in the absence or inability of the President, may be countersigned by one of the Vice-Presidents. But no warrant shall be issued, except in conformity with a regularly prepared voucher, giving the name of the payee and stating the occasion for the expenditure, and verified and approved as hereinafter prescribed. It shall be no part of the duties of the Treasurer to see that the warrants have been issued in conformity with such vouchers.

SECTION 2. The securities and muniments of title belonging to the Corporation shall be placed in the custody of some Trust Company of Chicago to be designated by the Board of Trustees, which Trust Company shall collect the income and principal of said securities as the same become due, and pay same to the Treasurer, except as hereinafter provided. Said Trust Company shall allow access to and deliver any or all securities or muniments of title to the joint order of the following officers, namely The President or one of the Vice-Presidents, jointly with the Chairman, or one of the Vice-Chairmen, of the Finance Committee of the Museum.

SECTION 3. The Treasurer shall give bond in such amount, and with such sureties as shall be approved by the Board of Trustees.

SECTION 4. All vouchers executed for the payment of liabilities incurred in the administration of the Museum, shall be verified by the Auditor, and approved for payment by the Director, and a member of the Executive Committee. All vouchers executed for expenditures for the construction or reconstruction of the Museum building, or buildings, shall be verified by the Auditor and approved for payment by the Chairman of the Building Committee. All vouchers executed in connection with the investments of the Corporation, or, in any way having to do with the endowment funds of the Corporation, shall be verified by the Auditor and approved for payment by the Chairman of the Finance Committee.

SECTION 5. The Harris Trust & Savings Bank of Chicago shall be Custodian of "The N. W. Harris Public School Extension of Field Museum" fund. The bank shall make disbursements only upon warrants drawn by the Director and countersigned by the President. In the absence or inability of the Director, warrants may be signed by the Chairman of the Finance Committee, and in the absence or inability of the President, may be countersigned by the Vice-Presidents. But no warrant shall be issued, except in conformity with a regularly prepared voucher, giving the name of the payee and stating the occasion for the expenditure, and verified and approved by the Auditor, the Director, and a

member of the Executive Committee. It shall be no part of the duties of the said Custodian to see that the warrants have been issued in conformity with such vouchers.

ARTICLE VI.

THE DIRECTOR

SECTION 1. The Board of Trustees shall elect a Director of the Museum, who shall remain in office until his successor shall be elected. He shall have immediate charge and supervision of the Museum, and shall control the operations of the Institution, subject to the authority of the Board of Trustees and its Committees. The Director shall be the official medium of communication between the Board, or its Committees, and the scientific staff and maintenance force.

SECTION 2. There shall be four scientific departments of the Museum—Anthropology, Botany, Geology and Zoology; each under the charge of a Curator, subject to the authority of the Director. The Curators shall be appointed by the Board upon the recommendation of the Director, and shall serve during the pleasure of the Board. Subordinate staff officers in the scientific departments shall be appointed and removed by the Director upon the recommendation of the Curators of the respective Departments. The Director shall have authority to employ and remove all other employees of the Museum.

SECTION 3. The Director shall make report to the Board at each regular meeting, recounting the operations of the Museum for the previous month. At the Annual Meeting, the Director shall make an Annual Report, reviewing the work for the previous year, which Annual Report shall be published in pamphlet form for the information of the Trustees and Members, and for free distribution in such number as the Board may direct.

ARTICLE VII.

AUDITOR

SECTION 1. The Board shall appoint an Auditor, who shall hold his office during the pleasure of the Board. He shall keep proper books of account, setting forth the financial condition and transactions of the Corporation, and of the Museum, and report thereon at each regular meeting, and at such other times as may be required by the Board. He shall certify to the correctness of all vouchers for the expenditure of the money of the Corporation.

ARTICLE VIII.

COMMITTEES.

SECTION 1. There shall be five Committees, as follows: Finance, Building, Auditing, Pension and Executive.

SECTION 2. The Finance Committee shall consist of five members, the Auditing and Pension Committees shall each consist of three members, and the Building Committee shall consist of five members. All members of these four Committees shall be elected by ballot by the Board at the Annual Meeting, and shall hold office for one year, and until their successors are elected and qualified. In electing the members of these Committees, the Board shall designate the Chairman and Vice-Chairman by the order in which the members are named in the respective Committee; the first member named shall be Chairman, the second named the Vice-Chairman, and the third named, Second Vice-chairman, succession to the Chairmanship being in this order in the event of the absence or disability of the Chairman.

SECTION 3. The Executive Committee shall consist of the President of the

Board, the Chairman of the Finance Committee, the Chairman of the Building Committee, the Chairman of the Auditing Committee, the Chairman of the Pension Committee, and three other members of the Board to be elected by ballot at the Annual Meeting.

SECTION 4. Four members shall constitute a quorum of the Executive Committee, and in all standing Committees two members shall constitute a quorum. In the event that, owing to the absence or inability of members, a quorum of the regularly elected members cannot be present at any meeting of any Committee, then the Chairman thereof, or his successor, as herein provided, may summon any members of the Board of Trustees to act in place of the absentee.

SECTION 5. The Finance Committee shall have supervision of investing the endowment and other permanent funds of the Corporation, and the care of such real estate as may become its property. It shall have authority to invest, sell, and reinvest funds, subject to the approval of the Board.

SECTION 6. The Building Committee shall have supervision of the construction, reconstruction, and extension of any and all buildings used for Museum purposes.

SECTION 7. The Executive Committee shall be called together from time to time as the Chairman may consider necessary, or as he may be requested to do by three members of the Committee, to act upon such matters affecting the administration of the Museum as cannot await consideration at the Regular Monthly Meetings of the Board of Trustees. It shall, before the beginning of each fiscal year, prepare and submit to the Board an itemized Budget, setting forth the probable receipts from all sources for the ensuing year, and make recommendations as to the expenditures which should be made for routine maintenance and fixed charges. Upon the adoption of the Budget by the Board, the expenditures as stated are authorized.

SECTION 8. The Auditing Committee shall have supervision over all accounting and bookkeeping, and full control of the financial records. It shall cause the same, once each year, or oftener, to be examined by an expert individual or firm, and shall transmit the report of such expert individual or firm to the Board at the next ensuing regular meeting after such examination shall have taken place.

SECTION 9. The Pension Committee shall determine by such means and processes as shall be established by the Board of Trustees to whom and in what amount the Pension Fund shall be distributed. These determinations or findings shall be subject to the approval of the Board of Trustees.

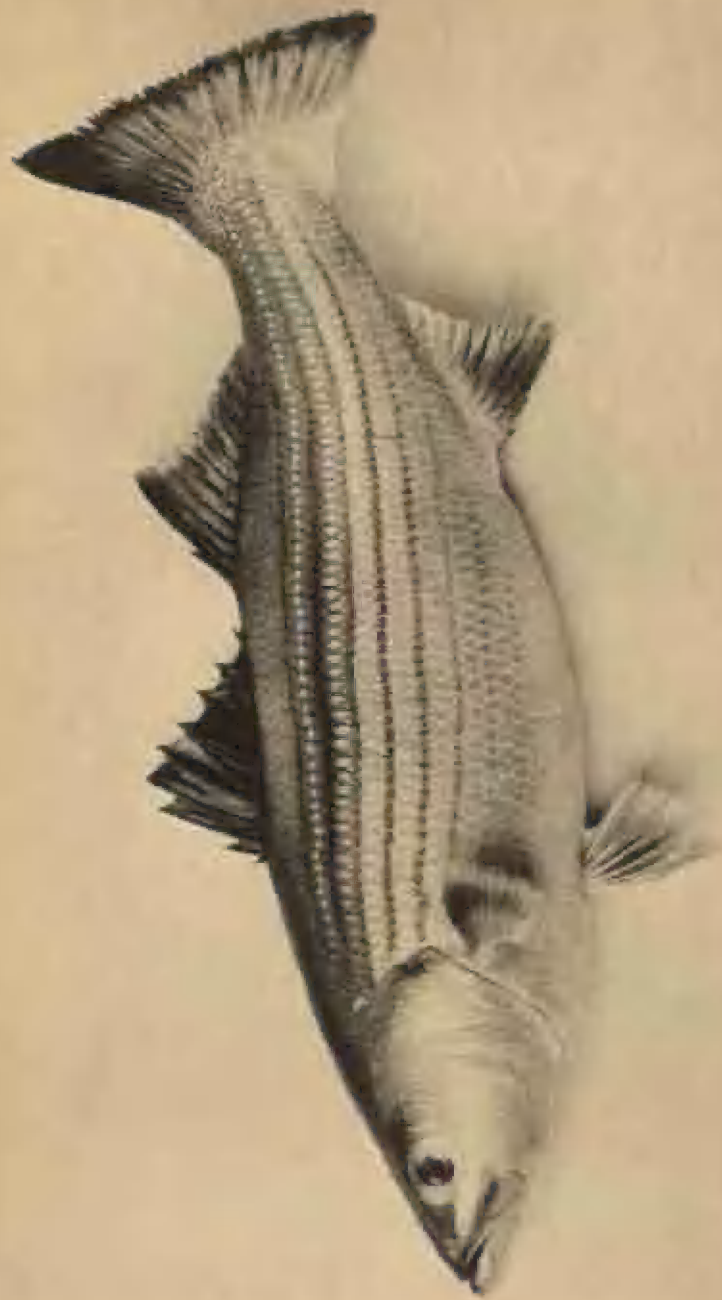
SECTION 10. The Chairman of each Committee shall report the acts and proceedings thereof at the next ensuing regular meeting of the Board.

SECTION 11. The President shall be ex-officio a member of all Committees and Chairman of the Executive Committee. Vacancies occurring in any Committee may be filled by ballot at any regular meeting of the Board.

ARTICLE IX.

NOMINATING COMMITTEE

SECTION 1. At the November meeting of the Board, each year a Nominating Committee of three shall be chosen by lot. Said Committee shall make nominations for membership of the Finance Committee, the Building Committee, the Auditing Committee, and the Pension Committee, and for three members of the Executive Committee, from among the Trustees, to be submitted at the ensuing December meeting and voted upon at the following Annual Meeting in January.



STRIPED BASS.

Prepared by combination of cast body and natural fins by L. L. Pray.

ARTICLE X.

SECTION 1. Whenever the word "Museum" is employed in the By-Laws of the Corporation, it shall be taken to mean the building in which the Museum as an Institution is located and operated, the material exhibited, the material in study collections, or in storage, furniture, fixtures, cases, tools, records, books, and all appurtenances of the Institution and the workings, researches, installations, expenditures, field work, laboratories, library, publications, lecture courses, and all scientific and maintenance activities.

SECTION 2. These By-Laws may be amended at any regular meeting of the Board of Trustees by a two-thirds vote of all the members present, provided the amendment shall have been proposed at a preceding regular meeting.

HONORARY MEMBERS.

| | |
|----------------------|------------------------|
| AYER, EDWARD E. | BLACKSTONE, MRS. T. B. |
| AYER, MRS. EDWARD E. | FIELD, STANLEY |
| | MCCORMICK, STANLEY |

DECEASED 1921

CORY, CHARLES B.

PATRONS.

| | |
|------------------------|---------------------|
| ARMOUR, ALLISON V. | MANIERRE, GEORGE |
| BUTLER, EDWARD B. | MARKHAM, CHARLES H. |
| COLLINS, ALFRED M. | MILLER, JOHN S. |
| DAY, LEE GARNETT | PAYNE, JOHN BARTON |
| GRAHAM, ERNEST R. | SARGENT, HOMER E. |
| HUTCHINSON, CHARLES L. | SIMPSON, JAMES |
| KENNEDY, VERNON SHAW | SMITH, WILLARD A. |
| | WILSON, JOHN P. |

DECEASED 1921

GUNSAULUS, FRANK W.
 SNIFF, FREDERICK J. V.

CORPORATE MEMBERS.

ALDIS, OWEN F.
ARMOUR, ALLISON V.
AYER, EDWARD E.

BARTLETT, A. C.
BLAIR, WATSON F.
BORDEN, JOHN
BUTLER, EDWARD B.
BYRAM, HARRY E.

CHALMERS, W. J.
CHATFIELD-TAYLOR, H. C.
COLLINS, ALFRED M.
CRANE, JR., RICHARD T.

DAY, LEE GARNETT

EASTMAN, SIDNEY C.
ELLSWORTH, JAMES W.

FIELD, MARSHALL
FIELD, STANLEY

GAGE, LYMAN J.
GRAHAM, ERNEST R.

HARRIS, ALBERT W.
HUTCHINSON, CHARLES L.

JONES, ARTHUR B.

KEEP, CHAUNCEY
KENNEDY, VERNON SHAW
KOHLSAAT, HERMAN H.

MCCORMICK, CYRUS H.
MANIERRE, GEORGE
MARKHAM, CHARLES H.
MILLER, JOHN S.
MITCHELL, JOHN J.

PAYNE, JOHN BARTON
PECK, FERDINAND W.
PORTER, GEORGE F.

RYERSON, MARTIN A.

SARGENT, HOMER E.
SIMPSON, JAMES
SMITH, SOLOMON A.
SMITH, WILLARD A.
SPRAGUE, ALBERT A.
STONE, MELVILLE E.

WILSON, JOHN P.
WRIGLEY, JR., WILLIAM

DECEASED 1921

GUNSAULUS, FRANK W.
SKIFF, FREDERICK J. V.

LIFE MEMBERS.

ALDIS, ARTHUR T.
ALDIS, OWEN F.
ALEXANDER, WILLIAM A.
ALLEN, BENJAMIN
ALLERTON, ROBERT H.
ARMOUR, A. WATSON

BAKER, MISS ISABELLE
BANKS, ALEXANDER F.
BARRELL, FINLEY
BARRETT, MRS. A. D.
BARRETT, ROBERT L.
BARTLETT, A. C.
BASSFORD, LOWELL C.
BEALE, WILLIAM G.
BECKER, A. G.
BILLINGS, C. K. G.
BILLINGS, FRANK
BLACKSTONE, MRS. T. B.
BLAINE, MRS. EMMONS
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BLAIR, WATSON F.
BLOCK, P. D.
BOOTH, W. VERNON
BORDEN, JOHN
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BRIDGE, NORMAN
BREWSTER, WALTER S.
BROWN, WILLIAM L.
BUCHANAN, D. W.
BUFFINGTON, EUGENE J.
BURNHAM, JOHN
BUTLER, EDWARD B.
BYLLESBY, H. M.

CARR, CLYDE M.
CARRY, EDWARD F.
CARTON, L. A.
CHALMERS, WILLIAM J.
CLARK, EUGENE B.
CLAY, JOHN
CLOW, WILLIAM E.
COBE, IRA M.
CRAMER, CORWITH
CRANE, CHARLES RICHARD
CRANE, R. RICHARD T.
CROWELL, H. P.
CUDAHY, JOSEPH M.
CUMMINGS, D. MARK
CUNNINGHAM, FRANK S.

DAU, J. J.

DAWES, CHARLES G.
DAY, ALBERT M.
DECKER, ALFRED
DEFREES, JOSEPH H.
DEERING, CHARLES
DEERING, JAMES
DELANO, FREDERIC A.
DICK, ALBERT BLAKE
DONNELLEY, REUBEN H.
DONNELLEY, THOMAS E.
DRAKE, JOHN B.
DRAKE, TRACY C.

ECKHART, B. A.

FAIR, ROBERT M.
FARNUM, HENRY W.
FARWELL, FRANCIS C.
FARWELL, JOHN V.
FARWELL, WALTER
FAY, C. N.
FELT, DORR E.
FERNALD, GUSTAVUS S.
FIELD, MARSHALL
FIELD, STANLEY
FORGAN, DAVID R.
FORGAN, JAMES B.
FORSYTH, ROBERT
FYFFE, COLIN C. H.

GARTZ, A. F.
GARY, JOHN W.
GETZ, GEORGE F.
GODDARD, LEROY A.
GOODMAN, WILLIAM O.
GOODRICH, A. W.
GRISCOM, CLEMENT A.
GROMMES, JOHN B.

HAMILL, ERNEST A.
HASKELL, FREDERICK T.
HASTINGS, SAMUEL M.
HIBBARD, FRANK
HILL, LOUIS W.
HINDE, THOMAS W.
HOPKINS, L. J.
HOROWITZ, L. J.
HOXIE, MRS. JOHN R.
HOYT, N. LANDON
HUGHITT, MARVIN
HULBERT, E. D.
HULBURD, CHARLES H.



POMPANO.

Prepared by combination of cast body and natural fins by L. L. Pray.

HUTCHINS, JAMES C.
HUTCHINSON, C. L.

INSULL, SAMUEL

HELKE, JOHN F.
JOHNSON, MRS. ELIZABETH
AYER
JOHNSON, FRANK S.
JONES, ARTHUR B.
JONES, DAVID B.
JONES, THOMAS D.

KEEP, CHAUNCEY
KELLER, THEODORE C.
KELLEY, WILLIAM V.
KING, FRANCIS
KING, JAMES G.
KIRK, WALTER RADCLIFFE

LAMONT, ROBERT P.
LAWSON, VICTOR F.
LEHMANN, E. J.
LEONARD, CLIFFORD M.
LOGAN, SPENCER H.
LORD, JOHN B.
LOWDEN, FRANK O.
LYTTON, HENRY C.

MCCORMICK, MRS.
MCCORMICK, CYRUS H.
MCCORMICK, HAROLD F.
MCELWEE, ROBERT H.
MCKINLAY, JOHN
MCKINLOCK, GEORGE
ALEXANDER
McLAUGHLIN, FREDERIC
McLAUGHLIN, GEO. D.
McLENNAN, D. R.
McWILLIAMS, LAFAYETTE,
MacVEAGH, FRANKLIN
MARK, CLAYTON
MARTIN, WILLIAM P.
MASON, WILLIAM S.
MINER, W. H.
MITCHELL, JOHN I.
MOORE, EDWARD S.
MORSE, JR., CHARLES H.
MORTON, JOY
MORTON, MARK
MUNROE, CHARLES A.

NATHAN, ADOLPH
NEWELL, A. B.

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PALMER, POTTER

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PEABODY, FRANCIS S.
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PINKERTON, WILLIAM A.
PORTER, FRANK WINSLOW
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PORTER, H. H.

RAWSON, FREDERICK H.
REAM, MRS. CAROLINE P.
REVELL, ALEXANDER H.
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RUNNELLS, JOHN S.
RUSSELL, EDMUND A.
RUSSELL, EDWARD P.
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RYERSON, EDWARD L.
RYERSON, MARTIN A.

SCHWEPPE, CHARLES H.
SCOTT, GEORGE E.
SCOTT, JOHN W.
SHAFFER, JOHN C.
SHEDD, JOHN G.
SIMPSON, JAMES
SMITH, ALEXANDER
SMITH, ORSON
SMITH, SOLOMON A.
SPOOR, JOHN A.
SPRAGUE, ALBERT A.
STEWART, ROBERT W.
STOUT, FRANK D.
STRAWN, SILAS H.
STUART, ROBERT
STURGES, GEORGE
SUNNY, B. E.
SWIFT, CHARLES H.
SWIFT, EDWARD F.
SWIFT, JR., G. F.
SWIFT, LOUIS F.

THORNE, CHARLES H.
THORNE, ROBERT J.

UPHAM, FREDERIC W.

VEATCH, GEORGE L.
VILES, LAWRENCE M.

WETMORE, FRANK O.
WILLARD, ALONZO J.
WILLITS, WARD W.
WHEELER, CHARLES P.

WILSON, OLIVER T.
WILSON, THOMAS E.
WILSON, WALTER H.
WINSTON, GARRARD B.
WINTER, WALLACE C.

WOOLLEY, CLARENCE M.
WRIGLEY, JR., WILLIAM

YATES, DAVID M.



FOSSIL SKULL OF NORTHERN MAMMOTH, FOUND IN ALASKA IN GLACIAL GRAVELS.
Exhibited in Hall of Paleontology.

ANNUAL MEMBERS.

ADAMS, CYRUS H.
ADAMS, MILWARD
ARMOUR, GEORGE A.

BAILEY, EDWARD P.
BELDEN, JOSEPH G.
BOAL, CHARLES T.
BURLEY, CLARENCE A.

COMSTOCK, WILLIAM C.
CUMMINGS, E. A.
CURTIS, FRANCES H.

EISENDRATH, W. N.

FIELD, HENRY
FRANK, HENRY L.
FULLER, O. F.

GLESSNER, J. J.
GREY, CHARLES F.
GURLEY, W. W.

HITCHCOCK, R. M.
HOLT, GEORGE H.
HYRNEWETSKY, STEPHEN

JENKINS, GEORGE H.
JONES, J. S.

LAMB, FRANK H.
LINCOLN, ROBERT T.
LINN, W. R.
LOGAN, F. G.

MCCREA, W. S.
MAGEE, HENRY W.
MANSURE, E. L.
MAYER, LEVY
MEYER, MRS. M. A.
MOORE, N. G.
MULLIKEN, A. H.

NOLAN, JOHN H.

PALMER, PERCIVAL B.
PARKER, FRANCIS W.
PEARSON, MRS. EUGENE H.

RIPLEY, MRS. E. P.
ROSENFELD, MRS. MAURICE

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SOPER, JAMES P.
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STOCKTON, JOHN T.

THROOP, GEORGE ENOS

WACKER, CHARLES H.
WALKER, JAMES R.
WALLER, EDWARD C.
WHITEHEAD, W. M.
WILSON, MRS. E. CRANE
WILSON, M. H.
WORCESTER, MRS. CHARLES H.

DECEASED 1921

PEARSON, EUGENE H.
UIHLEIN, EDWARD G.





ARTHUR B. JONES.

MEMBER OF THE AUDITING COMMITTEE SINCE JANUARY 1894.
MEMBER OF THE FINANCE COMMITTEE SINCE JANUARY 1907.

FIELD MUSEUM OF NATURAL HISTORY.

PUBLICATION 213.

REPORT SERIES.

VOL. VI, No. 2.

ANNUAL REPORT OF THE
DIRECTOR

TO THE

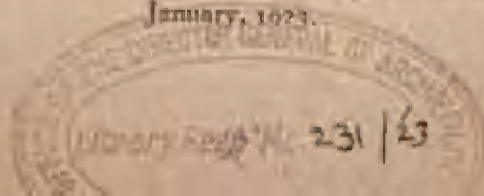
BOARD OF TRUSTEES

FOR THE YEAR 1922.



CHICAGO, U. S. A.

January, 1923.



BEQUESTS

Bequests to Field Museum of Natural History may be made in securities, money, books or collections. For those desirous of making bequests to the Museum, the following form is suggested:

FORM OF BEQUEST

I do hereby give and bequeath to "FIELD MUSEUM OF NATURAL HISTORY" of the City of Chicago, State of Illinois, _____

Cash Contributions made within the taxable year to Field Museum of Natural History to an amount not in excess of 15% of the tax payer's net income are allowable as deductions in computing net income under the Revenue Law.



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THE BOARD OF TRUSTEES

EDWARD E. AYER.

WATSON F. BLAIR.

JOHN BORDEN.

HARRY E. BYRAM.

WILLIAM J. CHALMERS.

RICHARD T. CRANE, JR.

D. C. DAVIES.

MARSHALL FIELD.

STANLEY FIELD.

ERNEST R. GRAHAM.

ALBERT W. HARRIS.

ARTHUR B. JONES.

CHAUNCEY KEEP.

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GEORGE MANIERRE.

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ALBERT B. LEWIS—*African and Melanesian Ethnology*

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DEPARTMENT OF GEOLOGY

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DEPARTMENT OF ZOOLOGY

WILFRED H. OSGOOD, *Curator*

WILLIAM J. GERHARD, *Associate Curator of Insects*

C. E. HELLMAYR, *Associate Curator of Birds*

Assistant Curators

EDMOND N. GUERET—*Osteology*

R. MAGOON BARNES—*Oology*

ALFRED C. WEED—*Fishes*

EDMUND HELLER—*Mammals*

JOHN T. ZIMMER—*Birds*

KARL P. SCHMIDT—*Reptiles and Amphibians*

Division of Taxidermy

JULIUS FRIESSER, *in charge*

DEPARTMENT OF THE N. W. HARRIS PUBLIC SCHOOL EXTENSION

S. C. SIMMS, *Curator*

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ELSIE LIPPINCOTT, *Librarian*

EMILY M. WILCOXSON, *Assistant Librarian*

RECORDER

H. F. DITZEL

GUIDE LECTURER

DOROTHY A. ROBERTS

AUDITOR

REMY BRIDGMAN

SECTION OF PRINTING

U. A. DOUGHER, *in charge*

SECTION OF PHOTOGRAPHY AND ILLUSTRATION

C. H. GARTNER, *Photographer*

CARL F. GRONEMANN, *Artist*

A. A. MILLER, *Photographer*

SUPERINTENDENT OF MAINTENANCE

JOHN E. GLENN

CHIEF ENGINEER

W. H. CORNING

January 1, 1923

ANNUAL REPORT OF THE DIRECTOR

1922

To the Trustees of the Field Museum of Natural History:

I have the honor to present a report of the operations of the Museum for the year ending December 31, 1922.

During the year the construction of the terrace, sixty feet wide, extending around the entire structure, and rising to a height of six feet above the ground, was completed. It is constructed of the same marble as the building proper and is provided with wide and imposing stairways leading to the central doors. This marks the completion of the Museum building.

The year was characterized not only by normal development but by an unprecedented activity and expansion which extended to practically all departments and sections of the Institution. After the arduous and anxious work of reinstallation and reorganization had been completed in 1921 the staff, with largely increased scope for action and progress, and greatly improved facilities for performing its duties, resumed its normal scientific and departmental activities with renewed zest and vigor.

This was particularly evidenced by the activity with which the previously formed plans for scientific exploration and survey of South America were entered into. No fewer than eight expeditions, representing each of the four Departments of the Museum, operated in that continent during the year, detailed accounts of which are given elsewhere. This activity in the field, so vital to the proper growth of an institution of this type, was made possible mainly by the generosity of Captain Marshall Field who, as was announced in last year's report, provided a contribution of \$50,000.00 a year for a period of five years for this purpose. In addition to this President Field contributed \$3,000.00 towards the expenses of a botanical expedition to British Guiana, and Mr. Arthur B. Jones provided the sum of \$25,000.00 to meet the cost of an important expedition for an ethnological investigation of Malaysia. Much of the stimulus given to the staff of the Museum may be attributed to encouragement imparted by these gen-

erous gifts which permit the accumulation of material of great value from new fields, often situated in remote and little known parts of the world. While the Museum has made phenomenal progress during the few years it has been in existence, the present increase of its scope and opportunities involves new needs and responsibilities. No greater service could be rendered to the Museum at this important period in its history than to make possible the extension of its expeditionary programme to insure that comprehensiveness and completeness of collections which is expected of an institution of importance and standing. Indeed, in this age of intensive investigation and research in all the sciences, the expansion of activities in this direction becomes almost imperative.

A further gift of \$50,000.00 towards the deficit in the Building Fund was received from President Field. Furthermore, he continued his annual contribution of approximately \$12,000.00 towards the work of plant reproduction in the Department of Botany, and added \$2,000.00 to the Harris Public School Extension Fund. Mr. James Simpson paid in to the Treasury of the Museum, during the year, a further sum of \$25,000.00 towards the construction of the theatre which bears his name. Mrs. Robert F. Cummings has been good enough to indicate her intention to provide \$2,000.00 towards the cost of publishing the manuscript prepared by Assistant Curator Cole on "The Tinguian. Social, Religious and Economic Life of a Philippine Tribe."

It is desired to make special mention of the interest which Mr. Edward E. Ayer has continuously evinced in the welfare of the Institution. It was again demonstrated by his decision to transfer \$100,000.00 United States of America 4¼% Gold Bonds to the Museum, which will eventually be used to establish a permanent lecture foundation. The Board of Trustees has decided that the benefaction is to be forever known as "The Edward E. Ayer Lecture Foundation." Mr. Ayer has also provided a fund for the payment of a preparator in the Science and Art Museum of California, who will provide this Institution with some duplicates of its extensive paleontological collection.

Among the noteworthy gifts received by the Museum, during the period under review, were collections and specimens from Mr. Martin A. Ryerson, Mr. Keith Spalding, and Mr. William J. Chalmers. General Charles G. Dawes has signified his intention of presenting to the Museum Library Dr. Manasseh Cutler's botanical manuscripts, notes and correspondence, together with notebooks and field observations.



THE JAMES SIMPSON THEATRE.

These deal principally with economic plants observed by Dr. Cusler and form an interesting series of documents.

The Museum is fortunate in the possession of many friends and benefactors, and it is fitting here to renew the expression of thanks to all who have contributed towards it in money and gifts during the year.

An excellent bronze bust of the late Dr. Frank W. Gunsaulus, executed by John G. Prasuhn of the Department of Anthropology, was completed during the year and installed in Frank W. Gunsaulus Hall.

The continued efforts of President Field to increase the Life Memberships of the Institution, resulted in the election of the following during the year: Mr. William A. Alexander, Mr. Charles Garfield King, Mr. Louis B. Knappenheimer, Mr. Philip S. Edmunds, Mr. Thomas H. McInerney, Mr. Arthur L. Farwell, Mr. James C. Ames, Mr. James P. Soper, Mr. Lester Armour, Mr. T. J. McNulty, Mr. Milward Adams, Mr. J. Ogden Armour, Mr. Knowlton L. Ames, Mr. Benjamin H. Marshall, Mr. J. M. Hopkins, Mr. Charles B. Pike, Mr. Edgar A. Bancroft, Mr. Harold N. Scott, Mr. Robert F. Carr, Mr. Ralph Van Vechten, Mr. E. W. Cramer, Mr. Joseph R. Noel, Mr. Howard W. Fenton, Mr. W. B. Storey, Mr. Frederick R. Balcock, Mr. Chauncey B. Borland, Mr. Charles I. Pierce, Mr. Louis A. Ferguson, Mr. John J. Glessner, Mr. John P. Wilson, Jr., and Mr. Frank A. Marsh.

During the year Mr. D. C. Davies became a Corporate Member of the Museum and was also elected a member of the Board of Trustees to fill a vacancy in the Board.

The following gentlemen were elected Honorary Members of the Museum in recognition of the eminent service they have rendered to science: Mr. Martin A. Ryerson, Captain Marshall Field, Mr. Arthur B. Jones, Mr. James Simpson, Mr. Charles R. Crane, Colonel Albert A. Sprague, Mr. Albert W. Harris, and Mr. William J. Chalmers.

Mrs. Robert F. Cummings was elected a Patron of the Museum, in recognition of the eminent service she has rendered to the Institution.

One of the most important and significant steps taken during the year was the considerable addition made to the scientific staff; Dr. Charles E. Hellmayr was appointed Associate Curator of Birds; Edmund Heller, Assistant Curator of Mammals; Karl P. Schmidt, Assistant Curator of Reptiles and Batrachians; John T. Zimmer, Assistant Curator of Birds; J. Francis MacBride, Assistant Curator of Taxonomy. Assistant Curator Dahlgren was promoted to the post of Asso-

ciate Curator of Economic Botany. The employment of Ashley Hine as Chief Bird Taxidermist; Colin C. Sanborn as Preparator in Birds; George M. Sternberg as Chief Preparator and Collector in Vertebrate Paleontology; John B. Abbott as Preparator in Vertebrate Paleontology; Carl E. Gronemann as Artist, and A. W. Miller as Photogravurist, is reported. Miss Dorothy Roberts was appointed Guide-Lecturer early in the year.

Several additions have also been made to the force in the Section of Printing, these additions being necessitated by the increased demands made by the production of the Museum publications.

A series of leaflets, describing objects and collections in the Museum, was inaugurated during the year. Fourteen of these were published and distributed. A manual of the Museum, containing information concerning the foundation, the endowments, and the activities of the Institution was published in November. A third edition of the Guide to the collections was brought up to date and issued late in the year. A Synopsis of the collections was also prepared and published, more especially for the use of the public schools. Reference is made elsewhere to the issuance of numbers in the regular publication series.

It is interesting to note in view of the facilities provided by the Institution that the Board of Trustees has granted permission to the Central Section of the Anthropological Association to designate Field Museum as the headquarters of the organization. The visit of the American Ornithologists' Union to Chicago, during the month of October, was a notable and interesting event, at which a large number of prominent ornithologists of the United States and Canada were present. An instructive popular session, illustrated by motion pictures, was given in James Simpson Theatre by the Union. An interesting exhibit of selected paintings, drawings and photographs of birds, by several artists, was displayed during the week in Room 12, on the main floor, and was kept open to the public until the third of December, attracting an unusual number of visitors. The American Society of Ichthyologists and Herpetologists also convened at the Museum during the same week. The regular monthly meeting of the Superintendents and Principals of the Chicago Public Schools was held in the James Simpson Theatre on November 4th, when ideas and suggestions were exchanged as to a closer cooperation between the Museum and the schools. The results were most satisfactory.

The Museum was honored during the year by the visits of a considerable number of officers and students of American and foreign

museums, and it was gratifying to note their unanimous expression of admiration of the fitness and extent of the building for museum purposes, the adequate equipment for the scientific and working staffs, and the arrangement and interest of the exhibits.

An important change in the method of recording the Museum departmental accessions was instituted by the Recorder in the month of June. The hand-written records in the accession books were replaced by typewritten cards kept in Rand Visible Files. Each drawer of these files contains 310 cards, showing at a glance the source of the material accessioned, its character, and the accession numbers. The hand-written indexes were substituted by a typewritten loose leaf system. The old manila jackets containing the accession records were also discarded, owing to their decay through chemical reaction, and approximately ten thousand new jackets of a more durable quality were typewritten, providing suitable protection for all records of the accessions.

It is with pleasure and satisfaction that record is made of the loyal cooperation and the willing service that all members of the staff have rendered during the past year, which has been especially encouraging in an individual sense, and proved, collectively, of much benefit to the Institution.

The alterations and rearrangements of the ground floor were practically completed during the year and the results have fully justified all anticipations. New exhibition area on this floor has been created to the extent of 125,000 square feet. An addition of importance was the construction of a small lecture hall intended to seat approximately two hundred and fifty persons. The hall has been equipped with stereopticon, screen and arrangements for controlled light. The James Simpson Theatre was completed during the year, and was also equipped with a stereopticon and motion picture apparatus.

The Library, Reading Room and Stack Room are now permanently established on the third floor, where they are conveniently placed in close proximity to the quarters of the scientific staff, which not only tends to increased efficiency, but has resulted in economy both of time and expense. In making these arrangements the fullest consideration was given to the comfort and convenience of those using the Library and the Reading Room, the accommodation at their disposal having been largely increased. The library is now adequately equipped and furnished for the continuance of its widespread usefulness.

The installation of a system for supplying the laboratories and laboratories with hot water was completed during the year. Illuminated signs,

indicating stairways, lavatories, restaurant, etc. were also provided. An elaborate system of ventilation for the ground floor was completed before the end of the year. The large room, situated at the southeast corner of the main pavilion, assigned for the use of the President and the Board of Trustees, has been decorated and furnished, President Field assuming the entire expense thereof.

Early in the year it was decided to establish a Photogravure Section for the production of illustrations for publications, leaflets, and postal cards. Space on the third floor was assigned for this work, in which were placed a large gas-heated oven for drying plates, a gas plate with boiler, work bench, trays and other appurtenances for preparing the coating. A 25" x 38" printing frame and stand, and a solar arc lamp of 3500 candle-power for copying the sensitized photogravure plates were also installed. A large galvanized iron sink, washing and lye tanks, drying racks, two stock tables and a hot water boiler to furnish vapor for the press room were placed in a room between the plate room and the press room. The first illustrations produced were for the Annual Report of the Director for the year 1921. Since then illustrations have been completed for eleven leaflets and for the publication "The Flora of the Santa Catalina Island." Approximately 20,000 postal cards were produced.

To facilitate the manufacture of installation furniture and fixtures in the Department of Anthropology, there were installed in Room 38 on the third floor a Crescent 24" variable speed planer, a Wallace 6" bench jointer, a Wallace 7" universal saw and a Moak single spindle horizontal boring machine; all of this machinery is driven by individual motors.

Four handsome bronze sign posts have been placed on Michigan Avenue at the entrances to Grant Park. These signs indicate the opening and closing hours of the Museum and have undoubtedly attracted the attention of strangers to the Museum.

A change in the hours of closing the Museum was authorized by the Board at a meeting held February 20, 1922. The Museum is now open to the public during the following hours: January, November and December 10:00 A.M. to 4:00 P.M.; February, March, April and October 10:00 A.M. to 5:00 P.M.; May, June, July, August and September 10:00 A.M. to 6:00 P.M. Heretofore the Museum has been closed to the public on Thanksgiving Day and Christmas. The Board, at a meeting held November 6, 1922, determined that the Institution should now be open to the public every day in the year.

MAINTENANCE: The Budget approved by the Board of Trustees authorized the expenditure of the sum of \$306,973 for the maintenance of the Museum during the year 1922. Budget expenditures amounted to \$302,507, leaving a surplus of \$4,466. Other appropriations amounted to \$90,924, which were mostly met by special contributions.

PUBLICATIONS

The following books have been published during the year:—

- Pub. 208—Report Series, Vol. VI, No. 1. Annual Report of the Director for the Year 1921. 76 pages, 16 photogravures, edition 2,000.
- Pub. 209—Anthropological Series, Vol. XIV, No. 2. The Tinguian. Social, Religious and Economic Life of a Philippine Tribe. By Fay-Cooper Cole. With a chapter on Music by Albert Gale. November, 1922. 267 pages. 83 halftones, 26 zinc etchings, edition 1,250.
- Pub. 210—Zoological Series, Vol. XII, No. 3. Game Birds from Northwestern Venezuela. By W. H. Osgood and B. Conover. August, 1922. 32 pages, 1 colored plate, edition 1,020.
- Pub. 211—Anthropological Series, Vol. VI, No. 5. The Hopewell Mound Group of Ohio. By Warren K. Moorehead. 126 pages, 48 halftones, 68 zinc etchings, edition 1,268.

A list of handbooks and leaflets published is given below:—

- Manual—52 pages, edition 5,000.
- General Guide—24 pages, edition 15,000.
- Synopsis of the Collections—44 pages, edition 11,160.
- List and Prices of Publications—16 pages, edition 750.
- Leaflets—Anthropology No. 1. Chinese Gateway. By B. Laufer. One photogravure, 3,044 copies.
- Anthropology No. 2. Philippine Forge Group. By F. C. Cole. One photogravure, 2,980 copies.
- Anthropology No. 3. Japanese Collections. By Helen C. Gunsaulus. 20 pages, 6 photogravures, 2,916 copies.
- Anthropology No. 4. New Guinea Masks. By A. B. Lewis. 12 pages, 6 photogravures, 3,000 copies.
- Anthropology No. 5. The Thunder Ceremony of the Pawnee. By Ralph Linton. 20 pages, 4 photogravures, 3,103 copies.

Anthropology No. 6. The Sacrifice to the Morning Star. By Ralph Linton. 20 pages, 1 photogravure, 3,073 copies.

Botany No. 1. Figs. By B. E. Dahlgren. 8 pages, 1 photogravure, 3,088 copies.

Botany No. 2. Coco Palm. By B. E. Dahlgren. 8 pages, 1 photogravure, 3,088 copies.

Botany No. 3. Wheat. By B. E. Dahlgren. 8 pages, 1 photogravure, 3,052 copies.

Geology No. 1. Arizona Gold Mine. By H. W. Nichols. 12 pages, 1 photogravure, 2,952 copies.

Geology No. 2. Models of Blast Furnaces for Smelting Iron. By H. W. Nichols. 12 pages, 3 photogravures, 3,061 copies.

Zoology No. 1. White-tailed Deer. By Wilfred H. Osgood. 12 pages, 1 photogravure, 2,940 copies.

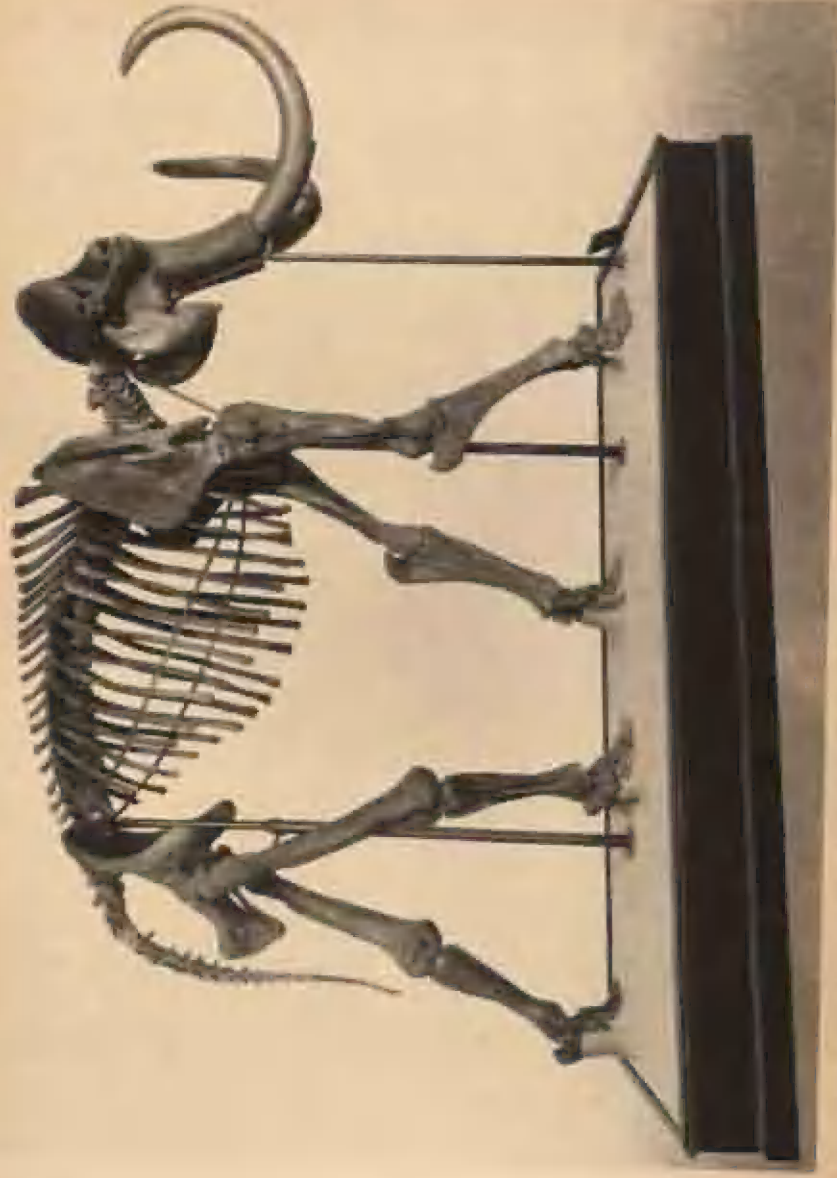
Zoology No. 2. Chicago Winter Birds. By Colin C. Sanborn. 12 pages, 1 photogravure, 3,099 copies.

Zoology No. 3. The American Alligator. By Karl P. Schmidt. 16 pages, 2 photogravures, 3,122 copies.

LIBRARY

The Library was transferred early in the year to the third floor, thus bringing it into close proximity to the staff, which fully appreciates the greater convenience and accessibility. Two thousand one hundred and eighty seven books and pamphlets, together with sixty maps have been received during the year, bringing the total number of books etc. in the library to 79,658. A number of valuable volumes, and some of historic importance, were given to the library by friends interested in the work of the Museum. Mr. Edward E. Ayer has, with his customary munificence, added two hundred and twelve books to the Ornithological Library which bears his name. Among them are several beautifully bound copies of early editions, including one of Horrebow's *Natural History of Iceland*, translated from the Danish original and published in London in 1758. The gift includes the following works:

| | |
|---------|-----------------------------|
| Blaauw | Monograph of the cranes |
| Buller | Birds of New Zealand |
| Butler | Birds of Great Britain 6v. |
| Dresser | Monograph of the coraciidae |
| Fritsch | Birds of Europe 1877 |



SKELETON OF THE EXTINCT COLUMBIAN MAMMOTH (*Erythrotherium Columbianum*) FROM SPOKANE COUNTY, WASHINGTON.
GIFT OF GEORGE MANIERRE.

| | |
|-----------------------|---|
| Jacquin | Beiträge zur geschichte der Vögel 1784 |
| Meyer | Unser Auer-, Rackel- und Birkwold und seine abarten |
| Salvin & Broderick | Falconry in the British Isles 1855 |
| Schlegel & Verster | Traité de fauconnerie 1844-1853 |
| Swainson & Richardson | Fauna boreali-americana 1831 |
| Swaysland | Familiar wild birds |
| Tschudi | Untersuchungen über die Fauna Peruana 1844-1846 |

Mrs. Elmer S. Riggs presented seventeen volumes of magazines of unusual interest and of early date from the library of her late father. Mr. Frank Smith. Thirty five volumes on miscellaneous subjects in Natural History were received from Mrs. William M. Derby, Jr. The Governor General of Chosen forwarded seven illustrated volumes on the antiquities of Korea. From the Institucio Catalana d'Historia Natural, Barcelona, the Koloniaal Museum of Haarlem, the Cultura Venezolana, Caracas, the Colegio de Senoritas, San Jose, Costa Rica, and the Canterbury Museum of New Zealand, were received complete sets of their publications. Other gifts of interest are indicated in the list of accessions.

Among a number of much-needed older works purchased during the year are the following:

| | |
|----------------------|---|
| Ammann | Hortus Bosiamus Supellex botanica 1675 |
| Colmeiro | La botánica y los botánicos de la península hispano-lusitana 1858 |
| Duparc & Tikonowitch | La platine et les gites platinifères de l'Oural et du monde |
| Forster | History of voyages 1786 |
| Molina | Saggio sulla storia naturale del Chili 1810 |
| Neve and Molina | Reglas de orthographia, diccionario del idioma Othomi 1767 |
| Petherick | Travels in central Africa 1869 |
| Raffenau-Delile | Mémoire sur les plantes qui croissent spontanément en Égypte 1824 |
| Ramusio | Delle navigationi et viaggi raccolto & con molti vaghi discorsi 1555-1558 |

| | |
|----------------|---|
| Rochefort | Histoire naturelle et morale des îles Antilles de l'Amérique 1665. |
| Ruiz and Pavon | Flora Peruviana et Chilensis 1798 |
| Valentyn | Oud en Nieuw Oost Indien 1724-1726 |
| Vesling | De plantis Aegyptiis observationes et notae ad prosperum Alpinum 1638 |

Among books of a later date are:

| | |
|----------|---|
| Baker | Calico painting and printing in the East Indies in the XVII and XVIII centuries |
| Phisalix | Les animaux venimeux et venins |
| Rivière | Le céramique dans l'art d'Extreme Orient |

The system of exchange has, as usual, caused considerable additions to be made to the library. The publications of the Museum are sent to all kindred institutions and societies at home and abroad, and publications were received from six hundred and eighty-three institutions and individuals during the year. Eight new exchanges were effected with institutions having literature of value to the library. Five hundred and thirty-one volumes were bound. Increased accommodation for the various catalogues was provided by the addition of four sections to the card cabinets. Eleven thousand one hundred and twenty-two cards were written and filed during the year, together with the monthly installment of author cards from the John Crerar Library. The Museum is indebted each year to libraries in and out of the city for the loan of necessary reference books. This year it is especially indebted to the Library of Congress and the Lloyd Library of Cincinnati for the loan of very rare books not obtainable elsewhere in this country.

DEPARTMENTAL CATALOGUING, INVENTORYING AND LABELING

ANTHROPOLOGY.—During the year the work of cataloguing in the Department of Anthropology was completed as soon as possible after the new accessions were received. Some older collections were also catalogued. The total number of catalogue cards prepared amounts to 1,385, and are distributed geographically as follows: North America 688; Mexico and South America 39; India, Tibet, Burma, Siam and Annam 491; China and Japan 142; Malaysia 11; Polynesia 3; Australia 2; Miscellaneous 9. All these cards have been entered in the Inventory Books of the Department, which number 38. The number of accessions

received during the year was 43, of which 37 have been catalogued. Nine accessions of the previous year were also dealt with. The total number of catalogue cards entered from the opening of the first volume amounts to 157,562. Several thousand labels were prepared and installed during the year, the number of labels supplied by the printer to the Department totaling 6,047. These labels are distributed as follows: Plains Indians 1,917; Nootka, Bella Coola, Coast Salish, Kwakiutl, Iroquois, Sauk and Fox 655; Egypt 84; Roman Frescoes 72; Irish Antiquities 47; Busts of prehistoric man 30; India 326; Tibet 27; Java 277; China 764; Japan 1,574; Maps 16 and Miscellaneous 258. The printer, further, supplied the Department with 1,000 printed forms for measurements in physical anthropology, 1,000 catalogue cards and 600 cards for the label file. 418 label cards were added to the label file, which was arranged in conformity with the installation or changes in the halls. The labels for each exhibition case are kept together, bearing the same number as the exhibition case, so that any label desired may now be traced at a moment's notice. 588 prints were placed in the photographic albums, and five new albums were opened. Prints in several albums were provided with typewritten explanations.

BOTANY.—All newly accessioned specimens in the Department of Botany have been catalogued as fast as they could be organized. 16,059 entries were made in the sixty-two catalogue volumes, bringing the total number of catalogued specimens in the Department up to 512,426. Augmentation of the various card indexes during the past year is as follows:—

| | No. of Cards | |
|--------------------------------------|----------------|---------|
| | Augmented 1922 | Total |
| Index to Botanical Species | 4,640 | 166,088 |
| Index to Common Names | 2,210 | 23,499 |
| Index to Collectors | 246 | 10,420 |
| Index to Geographic Localities | 51 | 2,860 |

GEOLOGY.—All accessions were catalogued as received, with the exception of the collections obtained by the Alberta expedition and part of those acquired by the Curator in Brazil, the cataloguing of which is not as yet complete. A total of 2,153 new entries have been made during the year. Of these, 1,045 represent additions to the mineral collection; 550 to paleontology; and 412 to the economic series. Of the specimens collected by the Curator in Brazil 808 have thus far been catalogued. A total of 310 new labels were written during the year, five being large descriptive labels. Of the smaller labels, a series of 106 were prepared for the exhibit of petroleum products presented by the Standard Oil

Company (Indiana), and 90 for miscellaneous specimens of minerals and meteorites. Most of these labels have been printed and installed, and the labeling of the Department may be considered as nearly complete as that of any actively expanding collection can be expected to be. To the Department photograph albums 167 prints have been added during the year, making a total of 3,821 prints now in these albums.

ZOOLOGY.—The accessions of the Department of Zoology, with the exception of the insects, were catalogued shortly after they were received. Some accessions that were received during the past few years and to which, at that time, the needed attention could not be given, were also properly catalogued. The total number of entries made was 3,589. They were distributed as follows: Birds, 2,704; Mammals, 365; Reptiles and Amphibians, 276; Fishes, 153; Insects, 75; Shells, 1; and Skeletons, 15. The making of the above entries, in most cases, also necessitated writing a label or tag with full data for each entry. The number of catalogue cards written was small. This was due to the fact that ten or more entries were recorded on each card, a new one being written for a species new to the various collections. For some groups, also, instead of cards, a loose-leaf ledger index has been adopted, a change that appears to be an improvement on the card system. For the collection of fishes 592 of these sheets, containing 1,886 entries, were written. A similar index, comprising 151 entries, was also prepared for the entire collection of salamanders. As a shell guide to the reference collection of fishes, 358 labels, each one with a different number and family name in large type, were printed and duly installed. Although a number of exhibition labels were prepared, particularly in the case of shells, a limited number only were printed and installed, namely, 17 for a cicada group and 116 for a screen exhibiting fishes. The actual number of fish labels, however, is somewhat misleading, as they were first printed on black stock and later replaced by others that were printed on paper that is more in harmony with the new color adopted for fish screens.

The following table shows the work performed on catalogues and inventories in the various Departments:

| | Number of Record Books | Total No. of entries to Dec. 31, 1922 | Entries during 1922 | Total No. of cards written |
|----------------------------------|---------------------------|--|---------------------------|----------------------------------|
| Department of Anthropology . . . | 38 | 157,562 | 1,385 | 157,947 |
| Department of Botany | 62 | 512,426 | 16,059 | 7,147 |
| Department of Geology | 22 | 147,671 | 2,153 | 8,496 |
| Department of Zoology | 40 | 105,220 | 3,589 | 34,900 |
| The Library | 14 | 130,894 | 11,120 | 306,438 |
| Section of Photography | 20 | 135,098 | 12,278 | ..... |

ACCESSIONS

The Museum, during the year, has been the recipient of a large number of important and valuable gifts. These, together with the extensive collections made by expeditions, have added very appreciably to the material and educational value of the exhibits of the institution.

ANTHROPOLOGY.—In the Department of Anthropology the unusually large number of 43 accessions is registered, 33 of which are by gift, 3 by exchange, 6 by purchase and 1 as the result of the Captain Marshall Field Colombian Expedition. Mr. Martin Ryerson presented a very remarkable burial figure of green-glazed Han pottery, representing a powerful mastiff in the attitude of guarding his master's grave. Such figures were interred with sport-loving noblemen in ancient China about the time of the beginning of our era, and are rare types. The figure in question is of so high a quality in modeling and glazing that it was deemed worthy of being placed on exhibition in the case showing selected examples of Chinese Art in Stanley Field Hall. To Mrs. Marshall Field, Sr., are due two lacquered and painted Chinese screens (so-called coromandel screens), each consisting of twelve panels and carved on each side with an elaborate design. One of these screens is shown in Room 23 in the northeast corner of the second floor. Another Chinese screen, composed of sixteen square detachable panels and adorned with well-carved figures of the Eight Immortals, was presented by Mr. Oskar J. Friedman of Chicago. A very fine and interesting old suit of painted hide armor with helmet and sword, from the Lolo of western China, was presented by Mr. William Ayer McKinney, Chicago. This welcome gift was very timely, as it fits in with a collection of 58 Lolo specimens purchased by the Museum from Dr. C. Schneider a botanist who travelled and collected in southwestern China. The Lolo form one of the groups of aboriginal tribes which settled in southern and western China prior to the arrival of the Chinese who conquered and colonized their country. While they gradually succumbed to Chinese influence, they still preserve many characteristics of their ancient culture, particularly in weapons and armor. They also retain their peculiar language and script. As they are difficult of access, Lolo specimens are rarely found in museums. The entire collection is now exhibited in Case 37 of Hall 24, and is particularly remarkable for its instructive series of hide armor.

Mr. William Wrigley, Jr., and Mr. Arthur B. Jones contributed jointly to acquire a unique collection of stone sculptures from ancient

India, the importance of which can hardly be exaggerated. Not only are most of these pieces exceedingly rare, but also most difficult to secure, as the exportation of antiquities from India is prohibited. It was solely due to a felicitous combination of circumstances that Mr. Alexander Scott, a well-known artist and traveller, who made the collection in the course of a many years' sojourn in India, was granted the privilege of taking it out of the country. The majority of the sculptures (27), belong to the so-called Gandhara period of the first two or three centuries of our era, being essentially Buddhistic in their religious character and under Hellenistic influence in their artistic types and style. There are eight excellent full figures and heads of Buddhas and Bodhisatvas, and twelve panels of friezes on which elaborate scenes are carved in high relief. Prominent among the latter are representations of Buddha's temptation by Mara, the spirit of evil, the first sermon preached by Buddha at Benares, and six figures of Greek composition presenting offerings to the Buddha. Seven other sculptures illustrate subjects of the purely Brahmanic religion or Hinduism, including a beautiful lava carving of the god Vishnu with his consort Lakshmi, and a frieze with four nautch-girls or bayaderes performing a sacred dance around a censer. The old religion of the Jaina, still flourishing among the merchants of India, is represented by a large marble statue of Parçvanatha, one of the prophets or teachers of the Jains, who preceded Mahavira, the actual founder of the religion, and by a fine cast image of solid brass, portraying another of their prophets.

In addition to this Indian collection, a valuable specimen from Tibet was purchased of Mr. Scott and is likewise due to the generosity of Mr. Arthur B. Jones. This is a ceremonial bone apron, consisting of forty-one plaques exquisitely carved, which was used in the sacred mystic ceremonies of the Tibetan Lamas. Such aprons are carefully guarded as temple treasures, and very few have crossed the borders of Tibet. Mr. Scott himself presented the Museum with a marble pedestal sculptured with a triad in high relief, representing Buddha seated in the center, supported by two Bodhisatvas with lotuses in their hands. This is a product of the third or fourth century A. D. A very interesting old Tibetan painting, depicting scenes from the life of the Buddha, is the gift of Miss Caroline Wicker, who added to it a number of other curious objects acquired during her travels in the Orient. An interesting cast image of solid gold, discovered in the jungle on the island of Mindanao, Philippines, was secured by purchase. It is presumably of Javanese workmanship, and was brought over to the Islands by traders. The type and style of the figure point to India. Mr. Edward



BURIAL FIGURE OF MASTIFF. HAN POTTERY, CHINA.

GIFT OF MARTIN A. RYERSON.

E. Ayer presented breast ornaments, made of silver inlaid with plain and engraved stones, worn by a Dalmatian woman.

A pair of Japanese bows was presented by Mr. H. J. Patten of Chicago. They are over seven feet in length, are lacquered black and trimmed with red rattan bands. They are accompanied by a fur-covered quiver containing ten arrows, the quiver and bows fitting into a large black-lacquer brace with handles. Such sets were carried in processions of the former feudal lords or daimyo. The crest of Nabeshima, the powerful daimyo of the Province of Hizen, is impressed in black on the gilded leather bow-tips and quiver decorations. Mr. Junius Wood, the well-known correspondent of the Chicago Daily News, has donated a beautiful fighting sword or katana, with which is a scabbard of black lacquer decorated with designs of golden pine needles. The fittings are of gold, silver, and shakudo etched with a tendril design. Particular interest is attached to the blade which bears upon its tang the signature of Asafune Suyemoto and the date 1392. There were obtained in exchange with the Logan Museum at Beloit College, Wisconsin, fifty-three potsherds, fragments of prehistoric pottery found in shell-heaps along the bay of Tokyo, Japan. They were originally exhibited at the World's Columbian Exposition by the Department of Anthropology of the Imperial University of Japan.

A man's coat and a complete woman's costume, made by the Quiche Indians of Guatemala, have been acquired by purchase from Mr. E. W. Allstrom, who has promised to supplement this collection on his return to Guatemala. The woman's costume is of a type which has survived almost unchanged from prehistoric times, and is notable for its brilliant colors, its beautiful weaving, and its ornate embroidery. The Quiche are of the same stock as the prehistoric Maya, the most civilized nation of ancient America. In spite of their political conquest and their long contact with Europeans, they are still numerous and retain much of their ancient culture. An excellent collection of Chippewa material was acquired from the Public Museum of Milwaukee by means of exchange. The Chippewa are one of the largest tribes north of Mexico, and formerly ranged along both shores of Lake Superior and as far west as North Dakota. In their industries and mode of life they closely resembled the tribes who occupied the state of Illinois during the early historic period. The collection includes numerous mats, birchbark utensils, and twined bags, together with raw materials and tools for their manufacture. Flag mats, used as thatch for winter dwellings, and a mat of cedar bark, are of especial interest. A birchbark canoe from the same tribe, in a good state of preservation, was received as a gift

from Mr. F. W. Morgan of Chicago. Another birchbark canoe was given by Mr. C. H. Benjamin, West Lafayette, Indiana.

A collection of Nambiquara material was received from the Museum Nacional of Rio de Janeiro by exchange. The Nambiquara are a forest tribe of southern Brazil who, at the time this collection was made, were still living under conditions similar to the peoples of the stone age. They are rapidly disappearing on contact with the European, and will probably be extinct in a few years. Among the most interesting objects are arrows, clubs, bracelets made from the tail of the armadillo and a stone axe with its original haft.

A number of ethnological specimens from the Kiowa and Hopi, collected by the late Dr. James Mooney, for many years a member of the Bureau of American Ethnology, were acquired from his sister, Mother Mary Agnes, F. O. They include numerous examples of headwork and basketry, as well as ceremonial objects. Of special interest are specimens of peyote. The peyote is a small cactus, growing on the Lower Rio Grande and in northern Mexico, which contains a powerful narcotic drug. When eaten, it produces hallucinations similar to those of hashish. An elaborate religious cult has been built up about its use by the Plains tribes. The collection is accompanied by a series of interesting photographs.

A small collection of ethnological material, which was acquired by purchase, consists of examples of Sioux metal work, and a number of miscellaneous specimens from the Eskimo of southern Alaska. A fine beaded saddlebag of buckskin has been presented by Mrs. Willard R. Wiley of Chicago. This bag was obtained many years ago by a relative of the donor, and is an unusually good example of Sioux beadwork. Two Mexican serapes or blankets made in the state of Oaxaca, Mexico, have been presented by Mr. P. M. Zulfer of Chicago, who for many years resided in Mexico. They are good examples of the present-day weaving, as practiced in that province, showing the combination of modern and primitive designs which now prevails. A large rug of white alpaca fur made in La Paz, Bolivia, is due to the interest taken in the Museum by Professor Archibald Gillis Baker. The Shasta Springs Hotel of Shasta Springs, California, presented through Mr. Edward E. Ayer a very interesting Indian mortar carved from lava. Mr. Alfred C. Dodman, Jr., of New York, manifested his interest in the Institution by offering a valuable pre-Columbian gold figure discovered in Central America and representing a rare mythological image. It has been added to the exhibits of prehistoric American gold in H. N. Higinbotham Hall. The Art Institute of Chicago presented to the Museum a bronze

bust of the Sioux Chief Sitting Bull modeled by Edward Kerneys. An interesting series of negatives taken by himself of the Seminoles of Florida, was donated by Mr. L. Winternitz of Grand Rapids.

BOTANY.—Among the notable collections received by the Department of Botany during the past year is the complete private herbarium of Edouard Jeanpert, consisting of about 35,000 sheets. The late M. Jeanpert, at times an assistant in the herbarium Cosson, was particularly interested, from 1887 to 1920, in amassing as full an herbarium as possible of the plants of the environs of Paris, both by extended field-work and by exchange. A search through ten of his 200 fascicles resulted in revealing the probability of his having secured large series of numerous French and Mediterranean Europe and Africa collectors. M. Jeanpert specialized in the Rubiads, Ranuncules, Saxafrages and the Ferns. His herbarium proved to be especially rich in these groups. Of the ferns, he evidently secured duplicates from all those collections represented in the Paris herbarium and those of Cosson, Franqueville and Drake. A glance through a few of the many large fascicles in his herbarium revealed, at least, plants of a large number of collections, many of which appear to be in complete series. Other collections of importance received during the year were Burchard's *Plantae Canariensis*; Knopf, Santa Catalina Island 500; Buchtien, Bolivia 158; Lloyd, Illinois 355; Clokey, Colorado 634; Peattie, Michigan, Indiana and Illinois 264; Gray Herbarium, New England and Nova Scotia 336; Dutton, Vermont, 587; Bush, Missouri 295; Blake, California 138; Ruth, Texas 529; Grant, Washington 145; and 3,205 South American Plants from the Herbarium l'Histoire Naturelle, Paris. The organized additions to the Herbarium and the total number of sheets of those localities to which additions have been made are as follows:

| Locality | Added this Year | Total in Herbarium | Locality | Added this Year | Total in Herbarium |
|-----------------------|-----------------|--------------------|-----------------------|-----------------|--------------------|
| NORTH AMERICA: | | | UNITED STATES: | | |
| Alaska | 23 | 152 | Alabama | 10 | 1,587 |
| Agatta Island | 5 | 5 | Arizona | 28 | 8,252 |
| Atka Island | 1 | 2 | Arkansas | 3 | 502 |
| Attu Island | 1 | 3 | California | 423 | 26,783 |
| Baronoff Island | 10 | 25 | Catalina Island | 1,967 | 4,890 |
| Kodiak Island | 1 | 1 | Carolina, North | 32 | 4,831 |
| Kyska Island | 1 | 1 | Carolina, South | 58 | 1,173 |
| Saint Paul Island | 5 | 216 | Colorado | 751 | 13,694 |
| Unalaska Island | 7 | 43 | Connecticut | 5 | 749 |
| Canada | 1 | 911 | Dakota, North | 29 | 603 |
| Mackenzie | 1 | 8 | Dakota, South | 4 | 1,887 |
| Nova Scotia | 95 | 534 | Delaware | 9 | 1,384 |
| Ontario | 73 | 2,474 | District of Columbia | 31 | 2,766 |

| Locality | Added this Year | Total in Her- barium | Locality | Added this Year | Total in Her- barium |
|---------------------|-----------------------|----------------------------|-----------------------|-----------------------|----------------------------|
| Florida | 55 | 20,524 | Mexico | 138 | 31,038 |
| Big Pine Key..... | 1 | 4 | Lower California.... | 12 | 1,697 |
| Georgia | 6 | 4,017 | Coronados Islands.. | 11 | 31 |
| Idaho | 13 | 3,703 | Magdalena Island.. | 1 | 35 |
| Illinois | 484 | 29,220 | San Benito Island.. | 1 | 12 |
| Indiana | 274 | 7,286 | Yucatan | 1 | 6,762 |
| Iowa | 42 | 1,984 | CENTRAL AMERICA: | | |
| Kansas | 129 | 1,435 | Costa Rica | 12 | 641 |
| Kentucky | 14 | 1,411 | Guatemala | 19 | 3,102 |
| Louisiana | 72 | 1,407 | Nicaragua | 1 | 240 |
| Maine | 215 | 1,591 | Panama | 63 | 244 |
| Maryland | 87 | 1,816 | Canal Zone | 20 | 85 |
| Massachusetts | 380 | 5,846 | San Salvador | 4 | 39 |
| Michigan | 188 | 4,155 | SOUTH AMERICA: | | |
| Isle Royal | 2 | 12 | Argentina | 5 | 1,398 |
| Minnesota | 7 | 2,392 | Bolivia | 162 | 4,558 |
| Mississippi | 14 | 2,097 | Brazil | 259 | 981 |
| Missouri | 586 | 4,802 | Chili | 38 | 297 |
| Montana | 25 | 4,241 | Colombia | 32 | 3,003 |
| Nebraska | 7 | 1,068 | Ecuador | 11 | 863 |
| Nevada | 174 | 1,488 | Galapagos Islands.. | 3 | 4 |
| New Hampshire | 69 | 1,679 | Albemarle Island.. | 1 | 62 |
| New Jersey | 101 | 3,680 | Indefatigable | | |
| New Mexico | 162 | 3,061 | Island | 1 | 9 |
| New York | 210 | 8,210 | Guiana, British | 3 | 77 |
| Ohio | 64 | 2,225 | Guiana, Dutch | 14 | 18 |
| Oklahoma | 19 | 343 | Guiana, French | 3 | 5 |
| Oregon | 34 | 9,049 | Patagonia | 2 | 29 |
| Pennsylvania | 24 | 19,294 | Peru | 70 | 232 |
| Rhode Island | 15 | 617 | Uruguay | 5 | 175 |
| Tennessee | 9 | 1,387 | Venezuela | 26 | 736 |
| Texas | 605 | 10,632 | Curacao | 1 | 102 |
| Utah | 40 | 4,139 | Trinidad | 60 | 712 |
| Vermont | 625 | 4,304 | EUROPE: | | |
| Virginia | 294 | 5,169 | Austria | 390 | 8,255 |
| Washington | 185 | 7,951 | Belgium | 52 | 359 |
| West Virginia | 94 | 2,283 | Denmark | 6 | 380 |
| Wisconsin | 34 | 5,334 | England | 18 | 2,566 |
| Wyoming | 4 | 1,705 | Finland | 60 | 180 |
| BAHAMAS ISLANDS: | | | France | 71 | 8,409 |
| New Providence.... | 10 | 2,459 | Germany | 1,509 | 19,779 |
| Turks Island | 1 | 12 | Greece | 2 | 706 |
| WEST INDIES: | | | Holland | 8 | 30 |
| Antigua | 1 | 14 | Italy | 112 | 3,690 |
| Barbadoes | 1 | 346 | Sardinia | 14 | 47 |
| Cuba | 74 | 11,248 | Montenegro | 2 | 2 |
| Guadaloupe | 1 | 1,036 | Norway | 16 | 1,235 |
| Jamaica | 215 | 9,247 | Portugal | 160 | 256 |
| Martinique | 4 | 624 | Russia | 2 | 1,620 |
| Porto Rico | 214 | 4,953 | Scotland | 1 | 587 |
| Saba, Little | 1 | 1 | Spain | 3 | 638 |
| Saint Martin | 1 | 1 | Sweden | 23 | 9,819 |
| Saint Thomas | 2 | 622 | Switzerland | 287 | 4,171 |
| Santa Lucia | 1 | 3 | Turkey | 1 | 22 |
| Santo Domingo | 4 | 1,327 | Wales | 2 | 191 |
| Tobago | 11 | 894 | | | |
| Tortola | 1 | 80 | | | |

| Locality | Added this Year | Total in Her- barium | Locality | Added this Year | Total in Her- barium |
|------------------------|-----------------------|----------------------------|-----------------------|-----------------------|----------------------------|
| AFRICA: | 2 | 162 | Palestine | 3 | 1,152 |
| Abyssinia | 2 | 228 | Persia | 6 | 56 |
| Algeria | 1 | 566 | Siberia | 4 | 476 |
| Canary Islands | 1 | 47 | Syria | 1 | 466 |
| Palma Island | 1 | 1 | Turkey | 3 | 39 |
| Teneriffe Island | 2 | 114 | AUSTRALIA: | 1 | 2,238 |
| Cape Colony | 73 | 1,901 | New South Wales | 26 | 754 |
| Egypt | 1 | 47 | Victoria | 2 | 438 |
| Madeira Island | 26 | 135 | Tasmania | 1 | 311 |
| Mozambique | 9 | 33 | OCEANIA: | | |
| Nubia | 5 | 16 | Java | 2 | 119 |
| Sudan | 2 | 2 | Samoa | 1 | 69 |
| ASIA: | | | Timor | 15 | 19 |
| Arabia | 4 | 24 | HORTICULTURAL: | 11 | 3,369 |
| China | 7 | 2,267 | ILLUSTRATIONS: | 5,563 | 7,315 |
| India | 4 | 1,077 | IGNOTA: | 12 | 1,333 |
| Bengal | 1 | 3 | | | |

GEOLOGY. Judge George Bedford of Morris, Illinois, presented the Department of Geology with 381 specimens of fossil plants from the beds of Mazon Creek, Illinois. These specimens exhibit the fine preservation characteristic of fossils from this locality, and, in consequence of lessening production of these beds, as well as the intrinsic value of the specimens, are highly prized additions. Eight specimens of ammonites and saurian remains from the Fort Benton beds of Kansas were presented by Mr. F. M. Jewell, and Mr. R. K. Thomas presented 45 specimens of invertebrate fossils from Arizona. To the crystal collection, through the generosity of Mr. William J. Chalmers, 281 crystal models, showing the ideal forms of as many natural crystals, were added. Mr. Edward E. Ayer presented a set of nine photographs which illustrate methods of construction of a model of Yellowstone Park. These will be of assistance in preparing similar models here. The Standard Oil Company (Indiana) added, during the year, to the series of petroleum products which they had previously presented, 182 specimens of lubricating oils, greases and candles. The same donors also provided glass containers for the exhibit. These, together with the previous donations from this company form a complete series illustrating the various stages of the distillation of petroleum and the products obtained therefrom.

Mr. Austin Q. Millar made a gift of 25 specimens of the typical diamond-bearing rocks of Arkansas and the minerals which accompany the diamond there. Mr. George Tollefson presented an unusual specimen of botryoidal malachite which he collected at a copper mine in the Belgian Congo, Africa. A peat from Russia given by Mr. Marcus

Hill is a welcome addition to the pest collection, as it represents a locality where this material has recently come into extensive use. Mr. H. K. Thurber gave five specimens of high-grade radium and vanadium ores from Utah and Colorado. From the United States Gypsum Company there was received a carefully prepared series numbering 48 specimens, illustrating industrial products obtained from gypsum and their uses. This collection combines features of attractiveness and instruction in an unusual degree. The most important accession by purchase was that of an iron meteorite, from Navajo, Arizona. This is a mass weighing 3,306 lbs. and is the largest meteorite specimen now in this collection. In addition to its size, it has other interesting and unusual features. Another entire iron meteorite, a new fall weighing 26 lbs., was obtained from Dungannon, Virginia.

ZOOLOGY. The accessions in the Department of Zoology, though neither large nor numerous, were, nevertheless, of considerable value. The very extensive collections obtained by the Museum's expeditions in Peru have not yet been received. Among the mammals, the most noteworthy accessions were two Alaska mountain sheep, presented by Mr. William Rindsfoos of Columbus, Ohio; two mountain sheep obtained by Mr. W. J. Morden of Chicago, in the Yukon and given to the Museum; and two Mexican mountain sheep, a gift from Dr. A. P. Chesterfield of Detroit, Michigan. Mr. Carl Akeley presented four white-tailed deer. Forty-seven mammals were obtained by the Museum's botanical expedition to British Guiana. The most valuable bird acquisition, by purchase, was a passenger pigeon, which was killed in Indiana about fifty-two years ago. This species, which only a generation ago was exceedingly abundant, is now extinct. The few specimens that are still in the hands of private owners are gradually being acquired by various museums. Another acquisition, also by purchase, was a collection of 132 birds from Illinois, Alaska and New Zealand.

A notable gift from Mr. Ashley Hine consisted of fifty well prepared birds from western Canada. The greater part of this donation can be used to advantage in replacing some of the rather poorly mounted specimens in the exhibit of birds arranged systematically.

Although most of the fishes acquired were obtained by means of expeditions, some very desirable acquisitions were received from other sources. An accession of 1,784 Panama salt-water fishes represents the final division of the results of the Museum's participation in the ichthyological survey of the Isthmus of Panama. A collection

consisting of 2,797 specimens was obtained on Museum expeditions working along the Dupage, Kankakee, Illinois and Mississippi Rivers. Important donations were made by the Booth Fisheries Company. One of these was a large "fat bass," weighing over three hundred pounds and measuring over six feet in length. It was taken at a depth of 1,476 feet in the Pacific Ocean. Other welcome gifts, from the same source, were a large halibut weighing, when dressed, a hundred and ten pounds; a king salmon caught in Lake Michigan, where this Pacific Coast species has been successfully introduced; starry flounders, one of the most showy of the flounder group; and a rat-fish, a representative of a group probably older than the one containing the sharks. From the Tuna Club, Catalina Island, through the much appreciated kindness of Mr. Keith Spalding, some very interesting game fishes have been received, among them being a sheephead, albacore, California white bass, California yellow-tail, California barracuda and a skipjack.

Over 290 specimens of reptiles and amphibians were received from Museum expeditions. Of this number, seventy-nine are to be credited to the botanical expedition to British Guiana; forty-nine to the work done by Mr. Weed and Mr. Pray on the Illinois and Mississippi Rivers, and 165 to local field work by various members of the Department. One of the important gifts, received from the Museum of Comparative Zoology, consisted of fifty lizards from the Fiji Islands. All of the species represented in this acquisition were new to the collection. Other noteworthy acquisitions were a gift of 106 specimens from Florida and Texas, received from the Aquarium of Rothschild's Department Store, through the courtesy of Mr. F. S. Young; and 115 specimens from Indiana, donated by Mr. L. L. Walters. Of the limited number of skeletons accessioned, ten were obtained through various expeditions, while five were gifts from various donors.

Among the insects accessioned were several acquisitions worthy of mention. By purchase, there were received 225 specimens, mainly beetles, from South Cameroon, Africa. This lot included four perfect examples of the goliath beetle. The Museum's collection of hawk-moths was further increased by a donation of thirty specimens by Mr. B. Preston Clark of Boston. From Dr. C. E. Hellmayr sixty butterflies and four moths from the highlands of central Europe were received as a gift. By means of local field trips, some very desirable specimens were also obtained. The total number of accessions is 6,666, distributed as follows: Mammals, 98; Birds, 268; Fishes, 4,850; Reptiles and Amphibians, 641; Skeletons, 15; Insects, 924.

EXPEDITIONS

The year was notable for an unprecedented activity in the field, the importance of which cannot easily be overestimated. As many as twelve expeditions of major importance, representing all the departments of the Museum were sent out, eight of which operated in South America which had been selected as a special field for exploration. In addition to the expeditions previously mentioned, an expedition, in which Field Museum is cooperating with the University of Oxford, England, has been dispatched to Mesopotamia to explore and excavate the ancient city of Kish, from which important results are expected.

ANTHROPOLOGY. The Department of Anthropology at present has three expeditions in the field. Assistant Curator J. Alden Mason left Chicago on the 10th of April for the purpose of making an archaeological survey of Colombia. Arriving at his destination at Santa Marta toward the end of April, he has since conducted a very active and successful campaign, travelling along the coast by canoe and over unbeaten tracks in the interior of the country. Near the Cape of San Juan de Guila he discovered the extensive ruins of an ancient city, which possessed stone-paved roads, where he camped for three months. At the end of August, when the work on the best sites was completed, he proceeded by canoe to the bay of Gairaca, where he explored an old Indian cemetery in which he found an enormous number of burial urns of immense size, many of which contained fine objects of stone, shell, bone or metal. From there he proceeded to Nahuange, the next bay to the east, where three or four very large mounds yielded excellent results. He found a dozen pottery vessels of artistic quality, among which were the first jars with painted decorations he had so far discovered. They contained upwards of 8,000 carnelian beads, a number of exceptionally fine gold objects, and remarkable ornaments and figurines of a translucent mottled green stone which outwardly resembles jade. In early December the expedition was based on Bonda, a small village, a few miles inland from Santa Marta, formerly the center of a large Indian population. Dr. Mason expects to remain in the field until the end of next April to continue and complete his work in Colombia, and particularly to undertake excavations in Pocigüeca, the old capital of the Indians, which is situated in the mountains near Santa Marta. He has already made several shipments to the Museum amounting to some three thousand specimens, which include pottery, gold ornaments, necklaces of stone and shell beads, very fine stone implements, and carved figurines. Several hundred negatives have also been received.

In view of the fact that the Museum possesses extensive collections from the Philippines on the one hand, and from the Melanesian Islands on the other, it was proposed as the next logical step to fill the gap between these two areas by engaging in intensive work in the Malay Archipelago. The culture of the Philippine tribes can be fully comprehended only in connection with that of the other branches of the Malayan family, and must be correlated with the history of the entire stock. Research was therefore recommended in the Malay Peninsula, Sumatra, Java, and Borneo for the purpose of shedding more light on the early history of the Philippines, and the movements and migrations of the Malaysians in general. At the same time it was proposed to secure representative collections adequately illustrating the life, industries and religions of these peoples.

In consideration of his former experiences in the Philippines, Assistant Curator Cole was appointed head of the Malaysian expedition, which will remain in the field for a period of approximately eighteen months. Dr. Cole left Chicago on the 10th of June for a brief visit to England and Holland for the purpose of benefiting by the advice of ethnologists familiar with the Malayan field, and studying collections from this quarter in the museums abroad. He reached Singapore on the 7th of September and proceeded from there to Kuala Lumpur, the capital of the Federated Malay States. Accompanied by Dr. Robinson, director of the States Museum, he made an excursion into Pahang, the heart of the country of the Sakai, who live in small scattered groups in the high mountains. He spent ten days there gathering information and accumulating material. Subsequently he paid a visit to the state of Perak for the purpose of studying the Semang and the Malay. At Kuala Kangsar, the home of the Sultan of Perak, he succeeded in obtaining such beautiful material, as rich embroideries, fine sarongs and other cloths, some excellent silver, brass, and iron work, and even a royal sarong from the palace. A shipment of nine boxes has been advised by him. Afterwards, he proceeded to Batavia, and from there to Padang, Sumatra, where he is at present engaged in work among the Menangkabau.

The Mesopotamia Expedition was organized to excavate the ancient capital of Sumer and Akkad, eight miles east of the city of Babylon. The ancient name of this locality was Kish; at present it is known by its Arabic name Tell El-Ohmer. Kish was the seat of the oldest dynasty known in history, and was also the seat of three more powerful later dynasties which ruled all Western Asia from 4500 B.C. to 2800 B.C. After that period, Kish occupied a prominent place in the history of

Babylonia until Babylonian history came to a close in the fifth and fourth centuries B.C. The mounds of ancient Kish probably contain the remnants of one of the earliest periods of mankind and the relics of an ancient civilization extending over a span of more than four thousand years. It is expected that the work of this expedition will yield exceedingly interesting and important results, and will shed light on the earliest phase of the cultural life of mankind in Babylonia. It is also a novel departure for the Museum, in that the civilizations of Mesopotamia have not yet been represented in its collections. The expedition is under the supervision of Professor S. H. Langdon, head of the Department of Assyriology, Oxford University and a prominent scholar in Semitic philology. A party of excavators left England for Bagdad at the beginning of November, and is expected to remain in the East for a period of three years.

BOTANY. Three expeditions of major importance were undertaken by the Department of Botany during the year. Mr. J. F. Macbride and Mr. William Featherstone were commissioned to collect botanical material in Peru. They sailed from New York, on March 22nd, and arrived at Lima, Peru, on April 3rd, where eight days were spent in making arrangements for work in the interior. During this time, acquaintance was made with Doctor A. Weberbauer, a Peruvian collector of many years' experience in the region, and also with Doctor R. Aspiazu and Mr. Albertio Peri. Much valuable assistance and information concerning the interior were obtained from these gentlemen. On April 12th the Expedition left for Matucana, six hours from Lima, and at an altitude of 8,000 feet. Five hundred (500) numbers were secured at this point, after which the Expedition joined that of the Department of Zoology in the hills at Chosica, where Mr. Macbride, finding the region very interesting from a botanical standpoint, remained, while Mr. Featherstone, with the heavier botanical equipment, went on with the Zoological party to establish a base at Huanuco, sixty miles down the Huallaga River from Cerro de Pasco. Mr. Macbride continued collecting at Viso and at Rio Blanco, 11,000 feet altitude. At these two points about 400 specimens were procured, after which he moved on to Casapalca from whence side trips were made to Morococha and Yauli. At the latter place snow and sleet fell daily. After three days' collecting, he moved on to La Oroya and later to Tarma and San Jose. Through the kindness of M. Paul Adrien and M. Jullier of the Huaron Mining Company, he was enabled to collect at Shelby, five hours distant.



A HUGE FRUIT CLUSTER OF *Attalea* PALM.
THIS IMPRESSIVE SPECIMEN OF OVER 8,000 FRUITS WEIGHED 240 POUNDS.
STANLEY FIELD BRITISH GUIANA EXPEDITION.

At San Jose, Sr. Galjuf, a coal mine owner, very hospitably entertained Mr. Machride, and generously made him a loan of four horses and an arriero to take him to Huanaco, 120 miles distant. During the journey, stops were made at Mina Ragra, (altitude 15,700 feet) and at Andachaca, Yanahuanca, Uspachaca, Hacienda Cabello, Hacienda Huertas, Hacienda Ambo and at Hacienda Chinche. A number of side trips were made from each of these stations, several of which necessitated remaining out on the plains over night in very cold weather. Reaching Huanaco, the arriero and horses were sent back to Sr. Galjuf, and work was continued at this point with side trips to Mito, collecting at the latter place until August 16th. A journey was also made from here, on foot, to Llata, sixty miles to the west on the river Marañon, returning September 1st. From Mito the upper Hualaga river was followed to its source near Cerro de Pasco. The expedition returned from there to Huanaco, where preparations were made to proceed to the coast at Casma; instead of returning to Lima by rail. Leaving Mito on September 27th, the expedition proceeded on foot, with three pack mules, over the trail to Huaraz on the western side of the Andes, where it arrived October 5th. Leaving Huaraz on October 7th, with horses, for Casma, the trip over the coastal desert region proved so hot that night travel became compulsory. Collections were secured at twenty-seven different localities between Mito and Casma. From there the expedition shipped on the 11th of October on a local steamer for Callao, where it transhipped for New York on the 13th, arriving at the latter place on October 27th. The expedition secured in all 2,576 numbers, including about 7,000 specimens, of which 100 were economic material such as native foods, fibers, sugars, "flours" used as bases for native drinks, as well as crude articles of native manufacture.

An expedition, financed by the President of the Museum, was sent to British Guiana, particularly for the purpose of securing botanical exhibition material and studies for the plant reproductions in the Department of Botany. Doctor B. E. Dahlgren, with Mr. J. R. Millar as aid, were absent from the Museum for about six months. Grenada, Trinidad and Dutch Guiana were visited, but most of the time was spent in British Guiana. The privileges of the Botanic Garden at Georgetown were generously extended to the expedition, for which thanks are due, particularly to Mr. W. Francis, Acting Director, Department of Science and Agriculture, British Guiana, and to Mr. H. Ward, Superintendent of the Garden. Mr. Chester N. Davies, American Consul in Georgetown rendered efficient aid in connection with the

customs formalities. A small cottage within a short distance of the Botanic Garden was rented to serve as a laboratory and headquarters. A dark-room was improvised for the photographic work, and the bulk of the collections was assembled there. Large pieces which required more space for storage and facilities for handling, drying and packing were generously accommodated by Messrs. Sproston's Ltd., at their wood-working mills.

Two hundred and thirty-five plaster moulds, 427 economic specimens and 52 branches were accumulated, which will serve as a basis for plant reconstructions or reproductions for the botanical exhibits. Among these subjects are such interesting forms as the Cannonball tree (*Couroupita*); the large flowered *Clusia*; the marantaceous *Mucro* (*Ischnosiphon*), which furnishes the Guiana Indians with their principal basket material; the curiously developed fruit of the Cashew with its seed hanging exposed below the fleshy, edible peduncle; *Dillenia* and *Lagerstræmia*, both East Indian trees, but found cultivated in the American tropics; a banyan-like Willow Fig (*Ficus Benjaminia*); and a small *Courida* tree with its remarkable aerial roots or pneumatophores. A chocolate tree was secured from the Fernandes Estate at Coveden. A considerable number of herbarium specimens and economic material were collected in Georgetown and in Surinam, and 975 negatives were made. Arrangements were made in Dutch Guiana for government cooperation in securing a collection of Surinam woods, and an agreement was made with a local collector in British Guiana to continue collecting herbarium and economic specimens for the Museum. Some geological and a number of zoological specimens were obtained, among them an Anaconda, a "labba" (*Coelogenys*) and an "Agouti" (*Dactyprocta*) which were brought home alive. The two latter were presented by the Museum to the Lincoln Park Zoological Gardens. The bulky collections were most carefully packed and reached Chicago in excellent condition.

As palms form a conspicuous feature of the flora of the Guianas, and the Botanic Garden and public grounds of Georgetown are rich in introduced species, advantage was taken of the opportunity to secure an extensive collection of dried flowering and fruiting palm spadices, which, together with leaves and photographs of each of some hundred species, form a most valuable and desirable accession to the exhibition and study collections. Conspicuous among them are an entire dried fruit cluster of the Ita Palm, dried flowering spadices and fruit clusters of two species of *Attalea*, and a perfect specimen of the rarely seen male flowering spadix of the double or Seychelles coconut.

The reason that such striking objects are seldom seen in museums is no doubt to be found in the difficulties of drying and packing for shipment. Clusters of palm fruits, when drying, have a habit of shedding their fruits. It was found that this could be prevented to a large extent by a preliminary killing of the tissues by means of a brief boiling. A vat in a cooperage was utilized, thus rendering it possible to treat even the largest pieces in this manner.

The Curator of the Department of Botany spent seven weeks, in September and October, working on South American plants in the herbaria at Paris and London. While at these institutions he was fortunate in arranging exchanges through which this Museum will receive a large amount of material of the earlier collectors in Colombia, Ecuador, Peru and Brazil. Of these, over 3,000 specimens have already been received.

GEOLOGY. Early in the year, the Curator of Geology visited Navajo, Arizona, to examine a meteorite that had been found there. It proved on examination to be a mass of much interest, and negotiations were entered into, which resulted in its being acquired by the Museum. The surroundings of the place of fall of the meteorite were carefully examined, and a full series of photographs of the locality was made.

During the year the Curator spent several months collecting in Brazil. It was desired to secure as full a series as possible of the important minerals and ores of that country, and this object, so far as the opportunities afforded by a single season would permit, was fully attained. Starting from Rio de Janeiro with a companion, Ouro Preto, the former capital of the State of Minas Geraes, and the center of much of the mining industry was reached by rail. Here collections were made in the topaz district, and about the manganese mines of Burnier and the gold mines of Passagem and Morro Velho. Travel was then continued on mule-back for a distance of about 250 miles to Diamantina, passing through the vast iron ore fields about Itabira do Matto Dentro and Conceicao, visiting the aquamarine and other mines of the pegmatites of Brejauha and Serro, and several more or less abandoned gold and diamond workings of the Caraca quartzite. Some of the diamond mines in the vicinity of Diamantina were visited and collections made of the typical diamond-bearing rocks and satellites of the diamond. Numerous specimens of optical and other quartzes from various localities in the Serra do Cabral were also collected. Returning to Rio de Janeiro, a journey was made to the basin of eruptive rocks in Caldas

in the northern part of the state of Sao Paulo, where a full series of the remarkable deposits of zirkite and the syenitic rocks of that area were collected. In all, about 1,000 specimens of typical gems, minerals and ores of Brazil were collected. The specimens included large topazes, aquamarines, quartzes and citrines, and full representations of the characteristic gold, iron, manganese and aluminum ores of the region. About one hundred and fifty negatives, illustrating mineral occurrences or other features of the regions visited, were also made.

Active collecting in vertebrate paleontology was also resumed. Two able and experienced collectors, Mr. George M. Sternberg and Mr. J. B. Abbott, were engaged, and under the direction of Associate Curator Riggs, two successive expeditions for collecting vertebrate fossils were made during the year. The first expedition, leaving the Museum in the latter part of May, operated in Canada for about three months. The purpose of this expedition was the acquisition of fossil dinosaurs in the basin of the Red Deer river in the Province of Alberta. Two nearly complete skeletons and some leg bones of several "duckbill" or Trachodont dinosaurs were secured, also a portion of a skeleton of a carnivorous dinosaur, a good skull of a "crested" dinosaur and an incomplete skull of what appears to be a hitherto unknown species of dinosaur. A fossil trunk of a Sequoia tree, 37 feet long and averaging about 18 inches in diameter, was another valuable specimen obtained, a peculiar feature of this specimen being, that while the heartwood or interior wood was silicified, the sapwood was in part changed to lignite. Carapaces and plastrons of four fossil turtles and about 100 specimens of invertebrate and plant fossils were also obtained in the region. Much of the material obtained was in localities so distant from established highways that considerable time and labor had to be devoted to building temporary roads. The total weight of specimens, which have been received at the Museum as a result of the work of this expedition, is about ten tons.

After returning from Alberta, Messrs. Riggs, Sternberg and Abbott sailed for Buenos Aires about the middle of November, for the purpose of collecting in Argentina specimens of the large Pleistocene vertebrates and their ancestors that are to be found in that country. During the southern summer the party proposes to visit southern Patagonia and work northward as the winter advances. As the party did not reach the field until the latter part of December, no results from this expedition can be reported as yet.

Associate Curator Nichols spent about a week in the vicinity of

LaSalle, Illinois, making photographs and securing data for constructing a model of a cement plant. Advantage was taken of the opportunity to obtain representative specimens of several forms of concretions, shales and limestones characteristic of the region.

ZOOLOGY. Preparations for zoological expeditions were begun early in the year and it was decided to continue in Central Peru, work which was begun there in 1912. Accordingly, Mr. J. T. Zimmer, Assistant Curator of Birds, sailed from New York on March 22nd, and three weeks later, on April 12th, Mr. Edmund Heller, Assistant Curator of Mammals, and Mrs. Hilda Hempel Heller sailed to join him. This party worked in cooperation with the botanical expedition to the same region conducted by Mr. J. F. Macbride and Mr. William Feathersone. They sailed direct to Callao, Peru, and, after brief preliminary work on the arid western slopes of the Andes, proceeded by rail to the elevated mining town of Cerro de Pasco, and thence down the eastern slopes of the mountains. Having organized for travel, they worked independently, Mr. Heller devoting himself to the collection of mammals, Mrs. Heller assisting him and giving special attention to photography, while Mr. Zimmer made collections of birds. They arranged to work intensively in the region about the headwaters of the three important tributaries of the Amazon, the Marañon, the Huallaga and the Ucayali. Bases were, therefore, established at the small towns of Ambo and Huanuco and successive excursions were made into the valleys of the three rivers mentioned and to the partly isolated highlands lying between them. It was thus possible to work from as great a height as 15,000 feet down to the hot forests on the Amazonian plain, covering a range of physical conditions of great variety. These plans were successfully carried out, and as this report is being written, the expedition is moving eastward to work in the Upper Amazon Valley above Iquitos, whence it is expected to return early in 1923. Owing to uncertainties of transportation in remote regions, it was deemed advisable to store the collections until they could be escorted to the railroad for shipment. Therefore, nothing has so far been received from the expedition. The importance of the collections cannot be fully judged until they have been studied, but, so far as reported, they will surpass, both in extent and importance, any similar collections previously made in Peru. They will, apparently, number 3,000 or more actual specimens, among them being many rare and some unknown animals.

In continuation of the Museum's exploration of South America, the

Curator of Zoology, accompanied by Mr. C. C. Sanborn, Assistant in the Division of Birds, and Mr. Boardman Conover, sailed on November 16th from New York, via Panama, for Valparaiso, Chile. This expedition will give its attention to the fauna of southern and central Chile, including some large, but little worked, islands along the coast. Mr. Sanborn will collect principally in Chile, and will remain in the field throughout the year 1923. The other members of the party, after working in Chile, will visit important points in Argentina, Uruguay and Brazil, and return to Chicago late in 1923.

In addition to expeditions sent to distant regions, several were also made to neighboring districts. Worthy of special mention were the results of one, made by the Assistant Curator of Fishes and the fish taxidermist, along the Illinois and Mississippi Rivers. On this expedition, 1,080 specimens were obtained, as well as plaster casts and color notes needed to reproduce some of the most interesting species.

The following list indicates the various expeditions sent out during the year:

| | | |
|---|---|-----------------------------------|
| COLOMBIA | J. Alden Mason | Archaeological Collections. |
| MESOAMERICA | S. H. Langdon | Archaeological Collections. |
| MALAYASIA | Fay-Cooper Cole | Ethnological Collections. |
| PERU | J. F. MacBride and Wm. Featherstone | Herbarium and Economic Specimens. |
| BRITISH GUIANA | B. E. Dahlgren J. R. Millar | Herbarium and Economic Specimens. |
| ALBERTA, CANADA | Elmer S. Riggs J. B. Abbott and G. M. Sternberg | Paleontological Specimens. |
| BRAZIL | O. C. Farrington | Gems, Ores and Minerals. |
| PATAGONIA | Elmer S. Riggs J. F. Abbott and G. M. Sternberg | Paleontological Specimens. |
| PERU | J. T. Zimmer | Birds and Eggs. |
| PERU | Edmund Heller Mrs. Hilda Hempel Heller | Mammals. |
| CHILE, ARGENTINE, URUGUAY AND BRAZIL | W. H. Osgood C. C. Sanborn and Boardman Conover | Mammals and Birds. |
| MISSISSIPPI RIVER | A. C. Weed and L. L. Pray | Fishes and Reptiles. |



ANACONDA. WATER BOA.
COLLECTED BY STANLEY FIELD BRITISH GUIANA EXPEDITION. CELLULOSE REPRODUCTION BY L. L. WALTERS.

INSTALLATION, RE-ARRANGEMENT, AND
PERMANENT IMPROVEMENT

ANTHROPOLOGY. In the Department of Anthropology ninety exhibition cases were newly installed during the year. The total number of cases at present on exhibition in the halls of the Department, inclusive of the new Halls I and J on the ground floor, amounts to 744. Busts of prehistoric races of man, modeled by Professor McGregor of Columbia University, have been installed in Case 3, Stanley Field Hall. The *Pithecanthropus erectus* of Java, the Neanderthal man of La Chapelle-aux-Saints and the Cro-magnon man of western Europe are shown there, together with a series of casts of skulls. Another addition made to Stanley Field Hall is the green-glazed pottery mastiff presented by Mr. Martin A. Ryerson, which is placed in Case 7. The Roman bath-tub formerly in Case 3 has been removed into Edward E. Ayer Hall.

In consequence of the new plan to concentrate all the Egyptian collections in a specially constructed room on the ground floor, Edward E. Ayer Hall was subjected to a thorough revision. Nine standard cases containing Egyptian antiquities and seventeen special cases containing Egyptian mummies were conveyed from there to their new quarters. To take their place, five cases were newly installed, two containing reproductions of Irish antiquities, and three displaying Roman lamps and candelabra, and red-figured vases from Italy. While in the previous arrangement the cases were three abreast, they are now arranged in pairs, which has considerably improved the appearance of the hall, which now shelters 42 cases, instead of 62 as formerly. For the Roman frescoes, new labels were prepared and installed, and twenty-two reproductions of antique furniture on wooden bases have been distributed between the pilasters.

In Hall 4, six cases containing Nootka, Athapascan and Coast Salish material were re-installed, and the labeling both in this and Mary D. Sturges Hall was completed. During the year the extensive Plains Indian collections of the Museum in Hall 5 have been re-organized, and in large part re-installed by Assistant Curator, Ralph Linton, who assumed his duties on February 1. Twenty-eight newly installed cases have thus far been placed on exhibition. The tribes of this region fall into three divisions. On the eastern edge of the Plains and along some of the rivers were settled tribes which tilled the ground, and whose culture had much in common with that of the tribes of the wooded country farther east. The central region was occupied by

nomadic tribes devoted to hunting, who practised little or no agriculture, and subsisted principally on the buffalo. Their culture was distinctive, and its affiliations have never been satisfactorily established. On the western edge of the Plains lived still other tribes whose culture was intermediate between that of the central tribes and that of the Indians of the Rocky Mountain plateau. The new arrangement of Hall 5 is designed to emphasize these differences, and to enable the visitor to receive and carry away a clear idea of the mode of life of each of these three divisions. The south section of the Hall is devoted to the hunting tribes of the central region, the Cheyenne and Arapaho being taken as typical representatives of this group. These two tribes were in close alliance for many years; their ordinary artifacts and method of life were identical. Beginning at the west end of the Hall, the visitor is shown, first, the utilitarian side of their culture, with exhibits illustrating their appliances for travel and hunting, their tools and utensils, their clothing, ornaments and weapons, as well as their dwellings and household furniture. Following these are exhibits which illustrate their religious life. Various objects used in the Sun Dance are displayed, together with a collection of the insignia of the men's and women's societies that is nearly complete. These insignia are of special interest, several of the objects being the only specimens of their kind now in existence. The last four cases on this side are devoted to the Crow, a tribe living to the north of the Cheyenne and Arapaho, and differing from them in minor details only. The collection has been so arranged as to emphasize these variations, which are most marked along the line of costume and decorative art. A new group, consisting of a Crow woman in festive dress leading a horse decorated with full trappings, has been installed in the central aisle. The northwest quarter of the Hall contains material from the Blackfoot, Assiniboin and Dakota tribes of the Central Plains, which also differed in some respects from the Cheyenne and Arapaho. The exhibits are especially designed to illustrate these features which were distinctive in the culture of each tribe. The Dakota form a link between the tribes of the Central Plains and those of the eastern border, their western hands being nomadic hunters, and their eastern settled agriculturists. Because of the pressure of the whites, many of the eastern Dakota joined their nomadic relatives, and objects of eastern origin were thus carried far out into the Plains. A number of such objects is shown, including medicine bags of a form characteristic of the central Algonquins. The central portion of the north side of the Hall is devoted to the various village tribes of the Plains. The Osage

have been chosen as typical of a number of Sioux tribes living on the eastern edge of the area. Many of their artifacts, notably their woven bags and sashes, bear a strong resemblance to those made by the Woodland tribes still farther east, which are shown in the adjoining section of Hall 4. The Arikara serve as representatives of a group of three settled tribes, the Mandan, Hidatsa, and Arikara, who formerly lived on the upper Missouri. They built large permanent houses, manufactured pottery, and also made a peculiar form of carrying basket, similar in its weaving to the basketry of the southeastern forest tribes. Examples of both their pottery and basketry are placed on exhibition. The life of the Pawnee and Wichita, tribes of the same linguistic stock as the Arikara, who lived farther to the south, is illustrated by representative collections. These tribes were remarkable for the high development of their religious beliefs and ceremonial observances, and the exhibits include sacred bundles and other objects of paramount interest. Material from the Ute, Bannock, and Shoshone has been placed in the northeast section of the Hall, adjoining the collections from the Plateau tribes exhibited in Hall 4. These three tribes seem to have moved out into the Plains in comparatively recent times, and their culture shows a blend of features characteristic of the tribes of the Plains and Plateau area. They differ from the Central Plains tribes principally in their extensive use of basketry and in their retarded social and religious development. The arrangement of the collections attempts to demonstrate these diversities. In Hall 6 a case of Apache clothing has been re-installed more effectively.

Twenty-one cases have been removed from Joseph N. Field Hall, for the purpose of obtaining more space and of opening up the central portion. All the old false-back cases will be eliminated and replaced by screen or shelf cases. In order to retain the representative character of these valuable collections it will be necessary to reinstall most of the cases, but the material will be considerably condensed in the process. Three new cases dealing with New Ireland, the Admiralty and Solomon Islands have already been installed with material taken from six old cases. In this manner room will be made for several cases of new material, not yet exhibited, from New Guinea and some of the surrounding islands. The installation of a special hall of Oriental Theatricals on the ground floor necessitated the removal of twelve cases from Hall 24. A quantity of Chinese material was also released from storage, and nine new cases were installed as follows: Ancient bone carvings, seals and amulets; bronzes of the Sung, Ming and Manchu periods; decorative bronze, chiefly censers and

candlesticks illustrating representations of animals; cloisonné enamel, painted enamel, iron and bronze inlaid with gold and silver wire; household objects of tin, including a set given as dower to a Peking bride; carvings of wood, bamboo, roots, ivory and lacquer; hide armor, weapons and utensils of the Lolo (cf. p. 97); Buddhist stone sculpture of the Sung, Ming and Manchu periods; and Buddhist votive figures of bronze, gilt bronze and clay of the early periods (Cases 1A, 22-24, 26, 37, 49, 56). The addition of these cases resulted in a new and improved arrangement of the Hall. Fifteen maps were placed in the twelve cases on the south gallery containing the models of Chinese pagodas, the locality of each pagoda being indicated on the map. One of the Chinese screens deposited by Mrs. Marshall Field, Sr., is shown in Room 23.

The William Wrigley and Arthur B. Jones collection of Indian sculpture will be assembled in a single standard case and placed in Hall 32 in order to ensure its proper geographical setting. The Tibetan bone apron, presented by Mr. Jones, will be found in Case 74. To this Hall was also added a new case containing the Tibetan stone sculpture obtained by the Blackstone Expedition. These pieces have not been exhibited before and are exceedingly rare. Owing to the removal of Japanese exhibits into Frank W. Gunsaulus Hall, it became necessary to modify the arrangement of the central portion of Hall 32. The gap was filled by two cases installed with shields and weapons, copper, brass and bidri ware from India. Four stone statues from Java, an old acquisition of the Museum, were likewise placed on exhibition, and the gold image, received from the Philippines this year, is shown in H. N. Higginbotham Hall. All cases in this Hall, as well as in Hall 24, were renumbered. The moving of cases in the former Hall for the purpose of recalcimining the walls necessitated rearrangement of specimens in the nine wall-cases.

Room 33 in the northwest corner of the second floor, formerly named Frank W. Gunsaulus Hall, proved too small to contain all the Japanese collections of the Museum. After the removal of the Library to the third floor, provision was made for this section to be accommodated in Hall 30 in the southeast corner of the second floor. These two rooms are now known as Frank W. Gunsaulus Hall, and were thrown open to the public on the 5th of August. Both the old and new acquisitions from Japan are here exhibited in thirteen cases, the smaller room being assigned to a display of surimono. The large tapestry representing a procession to the temples of Nikko, which had been withdrawn from exhibition for several years, has been re-instated to its former prom-

inence. The Gunsaulus collection of Japanese sword mounts has been re-installed in two cases specially built in the Museum. This collection was received in 1916 and was installed by the curator in 1917 in two standard cases which held the entire collection. It was deemed advisable, however, to adopt a selective method in dealing with them, and 228 guards and 118 smaller mounts with six mounted swords of various forms were picked for exhibition. The sword-guards or tsuka exhibited are arranged as far as possible in chronological order. The development of decorative design as applied to them may be traced from the sixteenth-century iron specimens, which are either plain or ornamented with open work, chiselling, or brass inlay, down to the eighteenth or nineteenth century, when they were often made of alloys and adorned with precious metals in relief. The specimens, which illustrate the work of almost all the important artists of sword mounts, are grouped according to schools and provinces. The remainder of the collection of sword mounts is classified and deposited in a cabinet in Room 51 (third floor), where it is available for students.

In Hall I located in the center of the ground floor, a new plan has been formulated in order to bring together the popular pastimes and theatrical performances as practised in Oriental countries. The object of these exhibits is to illustrate, as far as it is possible with the material at present in the Museum's possession, the development of dramatic art in the Orient. The exhibits are grouped in geographical order as follows: stage scene from the greatest religious drama of the Chinese (Case 1, continued in Cases 2-4); the dance of the lions, China (Case 5); actors' masks from a play formerly given in honor of an emperor's birthday, and representing the principal gods and goddesses of the Taoist religion, China (Cases 6-7); the shadow-play, China (Cases 8-9); masks used in mystery-plays of the Lamas, and costumed figures with masks, Tibet (Cases 10-17); puppet play, Java (Cases 18-19); orchestral instruments accompanying performances, Java (Cases 20-21); actors' masks, head-dresses and costumes, Java (Cases 22-23); Singhalese masks used by actors in pantomimes and comedies, and others used by sorcerers in the healing of disease (Cases 26-28). Of these 28 cases 16 were newly installed and labeled during the year. The Chinese stage scene was shown in the old building in a condensed manner in a case 13 x 7 feet. This case has been doubled in size, making it possible to display the figures and paraphernalia in exactly the same manner as shown on the Chinese stage. The blocks of two Mastaba tombs from Egypt were unpacked and laid out in order in the south hall of the ground floor. All of them were found in a

surprisingly good condition and will require no treatment. Preparations are well under way to erect the tombs at the earliest opportunity.

Four old cases have been remodeled and renovated, nine screens were built, and storage racks for the modeler's quarters and Room 35 (physical anthropology) were erected. In Room 66 the Chinese paintings were systematically arranged in the cabinet specially built for their accommodation last year. The Indian baskets presented by Mr. Homer E. Sargent were tribally grouped and stored in the same room. Indian house models were stored in Room 36. The material shipped by Dr. Mason from Colombia was checked and stored in racks in Room 40, valuables being deposited in the office safe. Storage cases in the clerestories of the fourth floor were re-arranged. In the modeling section of the Department three Japanese women's heads, hands, and feet were completed and utilized for the exhibition of Japanese costumes. The small working model of a New Guinea village group was completed in July, and the foundation was built for the actual model to be made on the scale of 8'x8'. Fifty injured specimens required for exhibition were restored, and forty dummies were made for the exhibition of Plains Indians' costumes. Moulds and other accessories were arranged in the newly built storage racks. Material in 116 exhibition and storage cases was poisoned during the year.

BOTANY. The Section of Plant Reproductions (Stanley Field Laboratories), completed and placed on exhibition during the past year the following plant studies: A complete natural size Pineapple Plant in full leaf and flower; a life size plant of the Water Hyacinth in flower; a number of flowers of the Four o' Clock arranged to illustrate Mendelian inheritance; and a branch of *Agathis* in fruit and one of *Hyenanea* were added to the amber-like resin case in Stanley Field Hall. Work was begun, and in some cases is near completion, on the following life size plant reproductions: The "Cajou" (*Anacardium occidentale*), a branch in full leaf and fruit; *Dillenia*, a leafing, flowering and fruiting branch; *Clusia*, a fruiting and flowering leafy branch; edible Passion flower fruits; Borassus Palm, a fruiting spadix; "Cicana", a cucumber-like gourd similar in taste to a cantaloupe, and which has a delightful fragrance; a complete plant of the Florida "Coontie", *Zamia floridana*; an enlarged flower of the "Neem" or "Margosa" tree, *Melia Azadirachta*; a whole plant of the Mistletoe in flower, leaf and fruit; flowers of the Chocolate plant; and a number of enlarged fibers of various economic fiber plants such as cotton, hemp, flax, ramie, jute and others.





IRON METEORITE FROM NAVAJO, ARIZONA.
WEIGHT, 3,006 POUNDS.

Four blocks of new steel cases have been added to the equipment of the Herbarium, which provide 768 additional pigeonholes for the accommodation of the collections.

GEOLOGY. In the Department of Geology, the Navajo meteorite acquired during the year was installed in a floor case in Hall 34. Space for the installation was obtained by consolidating in one case specimens of the Canyon Diablo meteorites, which had previously occupied two cases. The installation of the entire meteorite collection was also improved during the year by mounting all the specimens on individual blocks.

Reconstruction and mounting of the skeleton of Columbian mammoth presented by Mr. George Manierre in 1914 was completed early in the year, and the mount placed on exhibition in Hall 38. The work of reconstruction, in addition to that mentioned in the report of last year, included modelling and coloring of some leg bones, ribs and foot bones. A new steel framework for supporting the skeleton was also constructed, this work being done in the Museum laboratories. In this construction a very satisfactory combination of lightness and strength was obtained. A new base was also prepared, this being of standard Museum pattern, but with an inset of plaster, modelled and colored to represent ground. The skeleton is posed in the attitude assumed by the animal in walking.

A specimen of the head of a Devonian fish, *Macropetalichthys*, which had been dissected for examination by Dr. Erik Stensio of the University of Upsala, during a stay of ten days at the Museum, was reinstalled in such a manner as to make the dissected parts visible. In preparing this specimen for exhibition all the bony parts were given a thin stain of water-color of a brown tint which was characteristic of the bone of the specimen. The delicate veins and arteries were then picked out in a slightly lighter, and the nervous system in a slightly darker color. The matrix was given a gray stain similar to that of the original matrix. These stains, being approximately the color of the underlying material, do not materially affect the appearance of the specimen, beyond making its minute features more evident. The separate pieces used for study of the specimen were then assembled into a fewer number of larger ones, for which a special type of support was prepared. This was done by covering the backs of the assembled specimens with a sheet of tin-foil. Over this foil a plaster support was cast, and after it had hardened this was removed and the tin-foil discarded. The plaster was then trimmed, shellacked and colored. The specimen, thus mounted, makes a good exhibit, and yet

may be readily dissembled for close study. The results of Dr. Stensio's study of the specimen, the publication of which is expected shortly, promise to furnish an important contribution to paleontology, since the specimen afforded for the first time an opportunity to obtain an exact and detailed knowledge of the shape of the brain and details of the nervous and circulatory system of the head of a vertebrate animal of this very early period. The preservation of these soft parts was so perfect that they could be studied almost as well as if it were a fresh specimen.

Owing to modern advances in petroleum refining and developments in the products obtained, the larger part of the collection in Hall 36 which illustrates petroleum products and their uses has been reorganized. This reorganization involved not only withdrawing obsolete and substituting it by modern material, but also making a new arrangement and classification. The new material, as well as glass containers and a large exhibition case, was presented by the Standard Oil Company (Indiana). The new case is six feet square and eight feet high and is glazed on all sides. Its interior is fitted with glass shelves mounted upon glass pedestals. It has been placed in the center aisle in the east part of the hall. In it are shown lubricating oils and similar allied products of petroleum, the heavier and darker groups being placed in the lower part of the case and the lighter and lighter-colored groups above. This arrangement helps to bring out the full effect of the colors. From an adjoining case, part of the lubricating oils have been removed and a series of lubricating greases put in their place. Important additions have also been made to the collection of petroleum jellies or vaselines. A collection, which had for many years been on exhibition illustrating successive stages in the manufacture of finished oils according to the methods employed in utilizing Pennsylvania petroleum in 1892, has been completely discarded as obsolete and a new collection showing successive stages according to modern practice as employed by the Standard Oil Company (Indiana) has been substituted.

On account of the widespread interest evinced at the present time in oil-shales, a collection of specimens of these from several sources was assembled and placed on exhibition in Hall 35. The collection occupies one half of a floor case. The nucleus of the collection is a series presented last year by exhibitors at the American Mining Congress and by the U. S. Bureau of Mines. With these, specimens presented by Mr. J. A. Ede and others, and specimens formerly exhibited under other groupings have been incorporated. Exhibits illustrating the use of coal-tar pitch as a binder have been added to the coal by-products

collection, where they demonstrate a group of uses for this material not before shown. The peat collections have been enlarged by the addition of a series of the peats of Minnesota.

A collection illustrating various products and uses of gypsum, presented by the United States Gypsum Company, has been installed in a floor case and part of a wall case in Sliff Hall. Several specimens of crude gypsum, representing important sources of supply not hitherto shown, have been added to the exhibited series. In order to provide room for these combined exhibits, the floor cases containing asbestos, which had previously occupied two alcoves, were assembled in one, and the floor case containing gypsum placed in the empty alcove. A collection of gypsum products acquired earlier was also exchanged with one exhibiting lime in order to assemble the gypsum exhibits in one alcove.

The model of the Natural Bridge of Virginia has been provided with models to scale of an automobile and eighteen human figures. With these figures present for comparison, the great size of the bridge becomes more apparent. Seven models of human figures, one and one-half inches high, have also been made and placed in the models of the iron-smelting furnaces. These figures, to insure durability, were made of metal. Some of them were cast in Babbitt metal, but those last made have been carved directly from lead, this having been found to give a quicker and easier means of obtaining the desired result.

Some progress has been made in the construction of a model of a plant for the manufacture of Portland cement. It is proposed to exhibit this model in connection with the collection of these cements in Hall 36. This model is designed to illustrate all stages of the production of cement from the mining of the raw materials to the final finished product. After some investigation and inquiry, the plant of the Marquette Cement Company at Oglesby, Illinois, seemed to be the best adapted for the purpose, and, with the hearty consent and active co-operation of the officials of the company, the modelling of this plant was undertaken. The scale of the model now under construction is twelve and one-half feet to the inch. When completed it will be ten feet long and four feet wide. Details of mining the limestone and clay for the cement will be shown, the methods of transportation, and also the crushers, kilns and other machinery of the mills. Some of the larger elements of the machinery will be shown in section as well as entire, so that all stages of the process may be clearly portrayed. The model is being made in two sections, to be joined later. The first of these sections is now nearly completed.

Two attractive and substantial map filing cases have been made from plans prepared in the Department, which ensure the preservation of the maps and render them readily available for reference. The cases contain drawers of two sizes, one suitable for the topographic maps and atlases of the U. S. Geological Survey, and the others for larger maps. The cases contain 70 drawers. In them there have been carefully filed, grouped alphabetically by states and alphabetically under each state, 2,856 maps of the U. S. Geological Survey. The atlases of the same Survey, numbering 213, have also been placed in the drawers in numerical order, and 27 large miscellaneous maps have been given adequate space.

Some additions have been made to the equipment of the chemical laboratory, which will considerably facilitate work there, though much needs yet to be provided. Two permanent laboratory desks with stone tops and piped for gas, water and air were constructed, as well as a portion of a hood. A similar desk and part of a hood have been provided for the Curator's laboratory. Some new apparatus, including a Parr calorimeter, with all accessories, Stokes still, drying oven of U. S. Bureau of Standards type, hand rock-crusher and bucking-board, has been obtained. During the year several calorimetric determinations of the heating value of the fuels used by the Museum have been made, as well as various analyses of substances used in the Museum or belonging to the collections. The patina of a number of Japanese sword guards belonging to the Japanese collection has been restored. To the equipment of the paleontological laboratory a drill-press and engine lathe, each with individual motors, have been added, and the forge was connected with a flue, making it available for operation. Use of this equipment made it possible to construct in the laboratory the steel framework on which the skeleton of the Mammoth was mounted, and to manufacture many tools and other articles needed for field-work. Text for two guide leaflets, one on the model of the Arizona gold mine and one on the models of the blast furnaces for the smelting of iron, were prepared by Associate Curator Nichols and published during the year.

Zoology. The exhibition work in the Department of Zoology consisted mainly of the reinstallation of some of the cases, the preparation of specimens for groups, and the mounting of those species needed to fill gaps in the serial exhibit. In Hall 22, four cases containing the higher Primates were re-installed. The paired specimens were removed from their unsightly bases, thoroughly cleaned and otherwise improved.



BOTANICAL SPECIMENS COLLECTED BY THE STANLEY FIELD BRITISH GUIANA EXPEDITION.
A PORTION OF THE MATERIAL IN PROCESS OF CURING.

Instead of installing each pair of animals on a separate base, they were placed on a new ground-work base that covered the entire bottom of the case. This change added much to the attractiveness of the exhibit of these interesting animals. For the contemplated group of American elk, the taxidermist modeled four animals and made plaster casts of them. The serial exhibit, it was believed, could be made more interesting by showing a complete series of some of the well known North American mammals. For this reason work was started on two cases, the one to contain a specimen of each of the large American cats; the other to show the bears of North America. For the case of cats, a jaguar and a mountain lion were modeled and cast, and the work on one specimen for the bear case has been advanced to a similar degree.

Eight cases of the fish exhibit have been greatly improved by repainting the black screens with a light neutral tint, similar to that used on the screens in the bird cases. The specimens were rearranged and augmented, with the result that the exhibit has been made much more attractive. Since black labels are not very satisfactory on light backgrounds, as an experiment, one case has been installed with labels more in harmony with the color of the screen. The taxidermist assigned to the Division of Fishes completed the mounting of the thirty-five specimens, work on which was started last year. In addition, he has eighty or more specimens under way. These, on being completed, will be installed when there are enough in hand to fill a screen. He has also prepared a series of specimens showing the different stages of the art of mounting fishes by his greatly improved method. The taxidermist engaged in reproducing reptiles and amphibians by means of his celluloid process has secured remarkable results, several of his most recent reproductions being wonderfully life-like. The species that he has now reproduced in celluloid include, among the amphibians, two green tree frogs, a pickerel frog, four leopard frogs showing variation of color pattern, one toad, a mud puppy, a hell-bender and two western newts. Among the reptiles are a six-lined lizard, a turtle and eight snakes, of which the most notable are a pilot snake and a fourteen foot anaconda. A case containing the two habitat groups of insects, that were mentioned in the report for last year, was completed and placed on exhibition at the beginning of the year. Considerable progress has been made in condensing the shell collection. By eliminating duplicates, four cases have been reinstalled with a representative series of families that formerly filled over eight cases.

As a preliminary step toward forming the long delayed exhibit of

butterflies, a series of North American species have been selected and many of them remounted and relabeled. Whenever an empty case becomes available by condensing the shell exhibit, it will be utilized for the exhibition of butterflies or other insects. During the latter part of the year, there was installed in Hall 19 a panel exhibit, showing the well known periodical or seventeen-year cicada in its various stages. This insect was exceedingly abundant in northern Illinois during the early part of the summer and will not appear again for another seventeen years. A Leaflet on the same insect has also been prepared, and only awaits the completion of the drawings for a plate before it is submitted for publication.

For the rearrangement of the exhibits, the Curator formulated plans and made diagrams showing tentative provisions for the growth and development of each division. In collaboration with Mr. Boardman Conover, he prepared a paper entitled "Game Birds from Northwestern Venezuela." This was issued by the Museum as Publication 210 of the Zoological Series. He also wrote a Leaflet on the "White-tailed Deer." As chairman of the local committee of the American Ornithologists' Union, which held its annual meeting in the Museum, he endeavored to make the meeting as successful as possible. During the absence in the field of the Assistant Curator of Birds, noteworthy progress in arranging the reference collection of birds and in labeling specimens was made. The Assistant in the Division of Birds prepared a Leaflet on the "Chicago Winter Birds."

On assuming his duties in the Museum, Dr. C. E. Hellmayr, the Associate Curator of Birds, examined the entire collection, rearranged many of the families, and in many ways rendered the specimens more accessible and hence more useful. Besides naming several lots sent for determination by other museums, he has identified over 1,200 bird skins. He has, likewise, given considerable attention to desiderata for the Edward E. Ayer Ornithological Library. The reference collection of fishes was given some needed attention, but there still remain several large collections and some smaller groups that have not yet been distributed. Specimens which could be so treated were placed on the shelves arranged in families and a finding list prepared for them. About one-third of the material so arranged has been relabeled and catalogued in an alphabetic index of genera and species. Shelf labels in large type, giving the name and number of the family or families represented on each shelf, were printed and installed.

The work of accessioning and cataloguing the specimens in the Division of Reptiles and Amphibians was given first consideration. The



AMERICAN BISON, BUFFALO.
GIFT OF MR. ARTHUR B. JONES.



Assistant Curator also prepared a Leaflet on "The American Alligator," identified a collection of lizards from the Fiji Islands, and gave attention to the preparations for an expedition to British Honduras and Honduras early in 1923. Besides cleaning skulls and skeletons of both mammals and fishes, the Assistant Curator of Osteology dismounted and placed in the reference collection a number of skeletons. The sea elephant has been entirely remounted, and the fingers and toes have been wired so as to preclude the possibility of their being broken, if handled.

THE N. W. HARRIS PUBLIC SCHOOL EXTENSION OF FIELD MUSEUM OF NATURAL HISTORY

At the end of the year 1922, this Department had 752 cases available for distribution among the schools of Chicago. A scheme, by which three cases were loaned at regular intervals to each of 323 schools for a period of sixteen school-days, was systematically maintained during the year. The adoption of a new method, by which the delivery and collection of the cases are made at or near the principal's office, has greatly facilitated operations, which must be made during school hours in order that proper receipts may be obtained. In addition to scheduled loans, many others were made at the requests of principals and teachers. As the demand was almost wholly for cases containing industrial and commercial exhibits, it was considered advisable to prepare a larger number than usual of cases of this character. This has been made possible by the temporary employment of a former preparator of this department. The subject of one of the cases is "Useful things obtained from Coal," and sixteen of the best known were selected from among its numerous products. In addition to the usual general and specimen labels, the case is provided with an attractive and unique diagram illustrating the products.

Permission was obtained, in response to applications, to loan cases to schools other than public schools. These were the Francis W. Parker and the North Central High Schools, the latter being in charge of the Sisters of Charity. A similar request from the Concordia Evangelical Lutheran School was received too late for inclusion in the schedule of deliveries. A special loan of several cases was made to the main Chicago Public Library, and subsequently a request was made and granted, that the Library be placed on the schedule with the schools. At the annual convention of the National Education Association held in Chicago, February 27th to March 4th, several cases were,

by request, placed on exhibition to illustrate the aspect of visual instruction as presented by the Harris Extension, and lantern slides of other cases of the Extension were used in lectures. The Mid-winter Institute for Teachers of MacLean County, Illinois, through Professor F. Dean McClusky, Instructor of Education at the University of Illinois, requested the loan of a number of cases for exhibition and discussion during the three days' meeting of the Institute at Bloomington, the eight cases sent being much appreciated.

At the request of the Administrative Secretary of the U. S. National Museum at Washington, D. C., a case was sent there for use in a lecture given by Dr. Paul Bartsch, Curator, Division of Marine Invertebrates, of that Institution. In a letter Dr. Bartsch said: "Your loan groups are windows, a view through which should create the desire to pass through the door into the larger field." Ten cases were placed on exhibition at the south end of George M. Pullman Hall during the annual meeting of the American Ornithologists' Union. Cases were loaned to the Zoological Museum of the University of Minnesota and the Public Museum of Milwaukee as samples in making cases for a similar purpose.

GUIDE-LECTURER. A Guide-Lecturer was appointed on February the 15th for the purpose of conducting school children, clubs, societies and other visitors through the Museum Halls, and giving information and lectures on the various exhibits. The scheme proved successful and it was decided to develop especially the elementary educational section. After consultation with Mr. Peter A. Mortensen, Superintendent of Chicago Public Schools, and Mr. Dudley Grant Hayes, Director of Visual Education, a programme was arranged by which lectures at the Museum were made to correlate with class-room work in all the grades. During the six months in which the schools were in session, lectures were given to 139 classes attended by a total of 4,927 children. The number of clubs and conventions that visited the Museum during the year was not large, but is increasing as wider publicity is given to the lectures. In all, 43 clubs and conventions, numbering 1,682 persons, availed themselves of the service. To meet the requirements of casual visitors, a programme of eight weekly tours was announced late in July, which were well attended during the tourist season. The number of tours conducted was 67, representing an attendance of 527. Members of the scientific staff cooperated actively to make this section a success. The total number of lectures given during the year was 249, and the attendance amounted to approximately 10,000.

GENERAL

PRINTING. As all publications, leaflets, and other matter are now printed in the Museum, the work of this section has considerably increased. 5,540 publications, 30,173 leaflets, and 11,916 special issues were printed and bound during the year. The number of labels and other impressions printed was as follows:

| | Exhibition Labels | Other Impressions |
|------------------------|----------------------|----------------------|
| Anthropology | 6,047 | 2,000 |
| Botany | 133 | 52,642 |
| Geology | 711 | 2,900 |
| Zoology | 636 | 25,777 |
| Harris Extension | 320 | 500 |
| General | 312 | 19,549 |
| Total | 8,165 | 103,368 |

PHOTOGRAPHY. The following is a tabulation of the work done in this section:

| | Number of Lantern Slides Made | Number of Post Cards Made | Number of Negatives Made | Number of Enlargements Made | Number of Negatives Developed Field Exp. | Number of Prints Made |
|--------------------|--|---------------------------------|--------------------------------|-----------------------------------|---|-----------------------------|
| General | 163 | 3,352 | 287 | 30 | ... | 740 |
| Anthropology | ... | ... | 515 | 27 | ... | 1,810 |
| Botany | ... | ... | 109 | .. | ... | 2,653 |
| Geology | ... | ... | 51 | .. | 340 | 1,328 |
| Zoology | 23 | ... | 144 | .. | 86 | 143 |
| Harris Extension.. | ... | ... | 28 | .. | ... | 175 |
| Sale | 35 | ... | ... | .. | ... | 48 |
| Gift | 10 | ... | ... | .. | ... | 125 |
| Totals | 231 | 3,352 | 1,184 | 57 | 426 | 7,028 |

PHOTOGRAVURE. The number of photogravures printed during the year for various purposes is given below:

| | |
|--------------------|---------|
| Publications | 56,000 |
| Leaflets | 96,000 |
| Postal Cards | 20,000 |
| Total | 172,000 |

Herewith are also submitted financial statements, lists of accessions, names of members, etc., etc.

D. C. DAVIES, Director.

ATTENDANCE STATISTICS

FROM JANUARY 1, 1922 TO DECEMBER 31, 1922

| | |
|---|---------|
| Total Attendance | 386,299 |
| Paid Attendance | 74,339 |
| Free Admission on Pay Days: | |
| School Children | 21,537 |
| Students | 8,745 |
| Teachers | 1,058 |
| Members—Corporate | 25 |
| Life | 62 |
| Annual | 33 |
| Officers' Families | 30 |
| Press | 45 |
| Special | 447 |
| Admissions on Free Days: | |
| Thursdays | 54,158 |
| Saturdays | 60,507 |
| Sundays | 165,322 |
| Highest Attendance on any day (June 25, 1922)..... | 5,169 |
| Lowest Attendance on any day (December 18, 1922)..... | 42 |
| Highest Paid Attendance (September 4, 1922)..... | 2,140 |
| Average Daily Admissions..... | 1,058 |
| Average Paid Admissions..... | 359 |
| Guides sold | 18,526 |
| Articles checked | 13,854 |
| Picture Postal Cards sold..... | 202,708 |

GENERAL FUND

STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS

For the Year Ending December 31, 1922

Balance December 31, 1921.....\$16,237.20

RECEIPTS

| | | |
|---------------------------------|--------------|---------------------|
| Income | \$187,165.04 | |
| South Park Commissioners | 100,500.00 | |
| Admissions and Check Room | 18,026.78 | |
| Annual Members—Dues | 520.00 | |
| Sundry Receipts | 11,896.82 | |
| Sale of Securities | 28,970.00 | |
| Loans Repaid | 4,519.33 | |
| Contributions | 62,962.79 | \$415,460.73 |
| | | <u>\$431,697.93</u> |

DISBURSEMENTS

| | | |
|------------------------------------|---------------------|--------------------|
| Departmental Expenses | \$ 37,781.37 | |
| Expeditions | 34,182.97 | |
| General Operating Expenses | 249,214.33 | |
| Collections | 25,058.18 | |
| Furniture and Fixtures | 39,919.98 | |
| Securities Purchased | 31,920.00 | |
| Miscellaneous | 2,808.54 | |
| | <u>\$420,885.37</u> | |
| Transferred to Sinking Funds | 9,000.00 | \$429,885.37 |
| Cash Balance Dec. 31, 1922 | | <u>\$ 1,812.56</u> |

THE N. W. HARRIS PUBLIC SCHOOL EXTENSION

Statement of Income and Expenses for the Year 1922

Income

| | | |
|--|---------------------|--------------|
| Interest and Dividends on Investments | \$ 15,312.50 | |
| Less Collection Charges | 481.38 | |
| | <u>\$ 14,831.12</u> | |
| Interest on Bank Balances | 44.65 | \$ 14,875.77 |
| Expense of Distribution of Cases to Public Schools | <u>\$ 2,721.13</u> | |

EXPENSES

| | | |
|--|-----------------|--------------------|
| General Expense | 225.62 | |
| Salaries | <u>8,058.57</u> | \$ 11,005.32 |
| | | <u>3,870.45</u> |
| Deduction from Income (Depreciation of Automobile Delivery Car) | | 602.24 |
| Net Income for Year | | <u>3,268.21</u> |
| Less: Amount transferred to Reserve Fund February 2, 1922 | | 1,325.00 |
| Balance transferred to Surplus | | <u>\$ 1,943.21</u> |

ACCESSIONS

DEPARTMENT OF ANTHROPOLOGY

ART INSTITUTE of Chicago.

- 1 bronze bust of Sitting Bull, by Edward Kemeys, with pedestal (gift).

AYER, EDWARD E., Chicago.

- 1 woman's breast ornament of silver and plated silver, inlaid with plain and engraved stones—Dalmatia (gift).

BAKER, PROFESSOR ARCHIBALD GILLIS, Chicago.

- 1 large ring of white alpaca fur—La Paz, Bolivia (gift).

BANKS, COL. CHAS. E., Chicago.

- 109 prehistoric stone arrowheads—Island of Martha's Vineyard, Massachusetts (gift).

BENJAMIN, C. H., West Lafayette, Indiana.

- 1 birch-bark canoe—Chippewa, Ontario, Canada (gift).

CHALMERS, WILLIAM J., Chicago.

- 1 pottery figurine of woman—Tarascan Culture, Michoacan, Mexico (gift).

CROSBY, F. K., Chicago.

- 4 tobacco-pipes, 2 war clubs, 1 bow, 1 bow-case, 1 quiver, 8 arrows, 1 saddle, 1 kris and 1 knife—Hunkpapa Teton Sioux, Standing Rock Agency, North Dakota; Moro, Philippine Islands (gift).

DODMAN, ALFRED C., JR., New York City.

- 1 pre-Columbian gold image—Central America (gift).

DRAKE, MRS. TRACY, Chicago.

- 1 feast bowl carved from a burl—Hawaii (gift).

FALVEY, HARVED P., Chicago.

- 1 breast ornament carved from banded slate—Port Chesler, Indiana (gift).

FIELD, MRS. MARSHALL, SR., Washington, D. C.

- 2 lacquered and painted screens, each of twelve wooden panels—China (deposit).

FIELD MUSEUM OF NATURAL HISTORY.

Collected by J. Alden Mason.—Capt. Marshall Field Colombian Expedition:

- 1527 specimens of carnelian and agate beads, bracelets, anklets, and necklaces, stone implements, pottery and gold ornaments—Arhuaco, Colombia, South America.

Purchases:

- 1 gold image of a Hindu deity, probably of Javanese workmanship—Mindanao, Philippine Islands.

- 58 specimens ethnographical material, chiefly clothing, weapons, armor, musical instruments and household utensils—Lolo, Szechuan, China, from Dr. Camillo Schneider, Charlottenburg.

- 1 bronze bust of Dr. Gustavus, from John G. Prusuhn, Chicago.

- 37 specimens of baskets, arrows, belts, moccasins, pipes, and miscellaneous objects—Esquimo, Sioux, Pomo and Maricopa, Alaska and United States— from Mrs. Fred Schwatka, Rock Island, Illinois.

- 1 woollen coat, 1 woman's dress, embroidered (5 pieces) Quiche tribe, Guatemala, from E. W. Allstrom, New York City.



HEAD OF BODHISATVA, INDIA. GANDHARA PERIOD (SECOND CENTURY A.D.)
GIFT OF WILLIAM WRIGLEY, JR.

- 45 specimens of buckskin, bead-work, basketry, and ceremonial objects—Apache, Cherokee, Cheyenne, Hopi, Kiowa, Navajo, Paiute, Wichita, Arizona, Oklahoma and South-west United States, from Mother Mary Agnes, Chicago.

FRIEDMAN, OSKAR J., Chicago.

- 1 carved wood Chinese screen of fifteen panels—China (gift).

GUNSAULUS, MISS HELEN C., Chicago.

- 1 carved wood miniature Buddhist shrine, for household worship—Japan (gift).
1 woman's belt of ltrung seeds—Hawaii (gift).

JONES, ARTHUR B., Chicago.

- 20 ancient stone sculptures of Gandhara and later periods, 1 Jaina cast brass image, 1 Tibetan ceremonial bone apron—India and Tibet (gift).

LAGERQUIST, DR. A. W., China Inland Mission, Shanghai, China.

- 1 silver enameled wedding ring—Laohokow, Hupeh, China (gift).

LOGAN MUSEUM, BELOIT COLLEGE, Beloit, Wisconsin.

- 53 fragments of prehistoric pottery from shell mounds—Bay of Tokyo, Japan (exchange).

McKINNEY, WILLIAM AYER, Chicago.

- 1 suit of hide armor with helmet and sword—Lolo, Sechuan, China (gift).

MOESSNER, DR. FREDERICK, Chicago.

- 63 specimens of arrowheads, hammer, and other prehistoric stone implements; also some historical relics (fragments of pottery, glass, and iron)—Madison, Wisconsin (gift).

MORGAN, F. W., Chicago.

- 1 birchbark canoe—Chippewa, Ontario, Canada (gift).

MUSEU NACIONAL DE RIO DE JANEIRO, Brazil.

- 33 specimens of bows, arrows, ha-

kets, bead necklaces, stone axe, fiber aprons, bone bracelets—Nambiquara, Brazil (exchange).

NEWMAN, HENRY J., Chicago.

- 2 grooved stone axes—Mound Region near Cat Fish Creek, Dubuque, Iowa (gift).

NITTA, The MISSES YOKAYAMA KAWAMOTO, Evanston, Illinois.

- 3 pairs women's socks (tabi)—Japan (gift).

NOZAKI, MRS., Chicago.

- 3 silk cords for tying sash of woman's dress—Japan (gift).

PATTEN, HENRY J., Chicago.

- 1 pair of lacquered Daimyo bows on stand, with quiver containing 10 arrows—Japan (gift).

PUBLIC MUSEUM OF MILWAUKEE, Milwaukee, Wisconsin.

- 56 specimens of woven bags, birchbark vessels, baskets, mats, canoe paddle, etc.—Chippewil, United States (exchange).

RYERSON, MARTIN A., Chicago.

- 1 figure of mastiff of green-glazed Han pottery—China (gift).

SCOTT, ALEXANDER, Philadelphia, Pennsylvania.

- 1 marble pedestal with high-relief carving of triad, Gupta period—India (gift).

SHASTA SPRINGS HOTEL, Shasta Springs, California.

- 1 mortar carved from lava—California (gift).

WICKER, MISS CAROLINE, Chicago.

- 1 painting representing scenes from life of Buddha, 1 Buddhist clay votive tablet, 1 Pali palm-leaf manuscript, flint and steel pouch with brass ornaments—Tibet, China, Burma (gift).

- 1 tiger knife, 1 badge in shape of Garuda, 1 pair of slippers embroidered with beads, 2 fragments of glazed pottery, 1 album, 1 snake stick—Annam, Borneo, China, India, Japan, Siam (gift).

1 silver hat, 1 ivory seal, 1 brass bell, 1 cigar case, 1 linen box, 3 textiles—Annam, Japan, Java, Philippines, Siam (gift).

WILEY, MRS. WILLARD, R., Chicago.

1 pair beaded buckskin saddle-bags—Sioux, United States (gift).

WOOD, JUNIUS, Chicago.

1 large fighting-sword in black-lacquered sheath and silk bag, 1 iron sword-guard with de-

signs inlaid in silver, 1 fish-book of mother-o'-pearl—Japan and Marshall Islands (gift).

WRIGLEY, WILLIAM, JR., Chicago.

6 Buddhistic stone sculptures of the Gandhara period—India (gift).

ZULFER, P. M., Chicago.

2 woollen blankets with colored designs—Teotitlan, State of Oaxaca, Mexico (gift).

DEPARTMENT OF BOTANY

ARTHUR, DR. J. C., Lafayette, Indiana.

1 herbarium specimen (gift).

BARTHOLOMEW, ELAM, Stockton, Kansas.

9 herbarium specimens (gift).

BUCHTIEN, OTTO, La Paz, Bolivia.

25 herbarium specimens (gift).

CHALMERS, WILLIAM J., Chicago.

26 photographs of herbarium specimens (gift).

CLOKEY, I. W., Denver, Colorado.

214 herbarium specimens (exchange).

CRUMP, DR. J. E., Winter Haven, Florida.

1 economic specimen (gift).

DAVIDSON, DR. A., Los Angeles, California.

1 herbarium specimen (gift).

FIELD MUSEUM OF NATURAL HISTORY.

Collected by B. E. Dahlgren (Stanley Field Guiana Expedition):

375 economic and exhibition specimens.

240 herbarium specimens.

52 plants, branches in formalin and material for reproduction.

235 plaster moulds.

40 plaster casts.

975 negatives.

Collected by J. F. Macbride (Capt. Marshall Field Peruvian Expedition):

121 economic and exhibition specimens.

2463 dried plants.

6000 duplicates for exchange.

Collected by C. F. Millspaugh:

30 specimens (expedition).

469 specimens (collected).

Purchased:

36,420 herbarium specimens (Capt.

Marshall Field 1922 Fund).

17 economic specimens.

A number of other purchases have not yet been organized.

FULLER, G. D., University of Chicago.

59 herbarium specimens (gift).

GRANT, J. M., Langley, Washington.

145 herbarium specimens (exchange).

GRAY HERBARIUM, Cambridge Massachusetts.

346 herbarium specimens (exchange).

HAZLET, A. E., Sydney, Australia.

26 photographs of plants (gift).

HERBIER MUSEUM L'HISTOIRE NATURELLE, Paris, France.

3205 herbarium specimens (exchange).

INTERNATIONAL HARVESTER COMPANY, Chicago.

11 economic specimens (gift).

KING, MISS ANNA, Chicago.

83 herbarium specimens (gift).

KNOPF, EZRA C., Avalon, Santa Catalina, California.

4 herbarium specimens (gift).

LLOYD, R. N., Chicago.

368 herbarium specimens (gift).

McCREA, R. M., Chicago.

1 economic specimen (gift).

- MILLSPAUGH, C. E., Chicago.
25 specimens (gift).
- NEW YORK BOTANICAL GARDEN, New York City.
3 herbarium specimens (gift).
198 herbarium specimens (exchange).
- PAYSON, E. B., Laramie, Wyoming.
1 herbarium specimen (gift).
- PEATTIE, DONALD CULROSS, Cambridge, Massachusetts.
264 herbarium specimens (gift).
- PIPER, C. V., Washington, D. C.
1 herbarium specimen (gift).
- ROSE, DR. J. N., Washington, D. C.
12 herbarium specimens (gift).
- R. M. MCCREA ESTATE, Lake Geneva, Wisconsin.
1 economic specimen (gift).
- SHERFF, EARL E., Chicago.
8 herbarium specimens (gift).
- STRAUCH, F. E., Riverdale, Illinois.
24 economic specimens (gift).
- TONDUZ, A., Guatemala.
14 herbarium specimens (gift).
- TUTTLE, R. H., San Bernardino, California.
1 economic specimen (gift).
- UNIVERSITY OF CALIFORNIA, Berkeley, California.
1 herbarium specimen (exchange).
- U. S. DEPARTMENT OF AGRICULTURE, Washington, D. C.
1 herbarium specimen (gift).
- U. S. NATIONAL HERBARIUM, Washington, D. C.
1951 herbarium specimens (exchange).

DEPARTMENT OF GEOLOGY

- AYER, EDWARD E., Chicago.
9 photographs illustrating making of a model of Yellowstone Park (gift).
- BEDFORD, GEORGE, Morris, Illinois.
381 specimens fossil plants—Mazon Creek, Illinois (gift).
- BENTON, O. M., Courtland, Ohio.
1 specimen petroleum—West Mecca, Trumbull Co., Ohio (gift).
- CHALMERS, WILLIAM J., Chicago.
26 models of distorted and pseudo-symmetrical crystals (gift).
225 crystal models (gift).
- CHRISTOPHERSON, A. E., Clarence, Iowa.
1 specimen rock weathering—Clarence, Iowa (gift).
- EDE, J. A., La Salle, Illinois.
1 specimen oil shale—Peru, Illinois (exchange).
1 specimen smithsonite—Los Plumesos, Chihuahua, Mexico (exchange).
- FIELD MUSEUM OF NATURAL HISTORY.
Collected by B. E. Dahlgren (Stanley Field Guiana Expedition):
- 1 specimen worked soapstone.
5 specimens rocks and fossils—Guiana.
- Collected by O. C. Farrington (Capt. Marshall Field Brazil Expedition):
808 specimens gems, minerals and ores—Brazil, S. A.
3 specimens sandstone—Navajo, Arizona.
- Collected by H. W. Nichols:
1 specimen river sand—Chicago.
6 specimens hard-pan—Chicago.
8 specimens brachiopods—Oglesby, Illinois.
20 specimens gypsum—Oglesby, Illinois.
24 specimens concretions, septaria, shales and limestones—La Salle, Illinois.
- Purchase:
4 specimens minerals—Lanzada, Italy.
1 iron meteorite—Dungannon, Virginia.
1 iron meteorite—Navajo, Arizona.
1 fossil skull.
- FLEISCHLE, J. H., Springfield, Illinois.
1 specimen xericite—Arizona (gift).

GALLAGHER, J. E., Chicago.

- 1 specimen wattervilleite — Texas (gift).

GILMORE, Dr. W. S., Owensboro, Kentucky.

- 21 specimens limonite geodes—Green River, Kentucky (gift).

HILL, MARCUS STOW, Chicago.

- 1 specimen peat—Prov. of Novgorod, Russia (gift).

HOLMES, THOMAS J., Chicago.

- 12 specimens peat with fossil shells—Bremen, Illinois (gift).

ILLINOIS CLAY PRODUCTS COMPANY, Ogleby, Illinois.

- 4 specimens fire clay—LaSalle Co., Illinois (gift).

JEWELL, F. M., Carlinville, Illinois.

- 8 specimens fossils—Fort Benton Beds, Kansas (gift).

KLECKNER, M. E., Tiffin, Ohio.

- 1 specimen variegated sandstone—Leesville, Ohio (gift).

LEAN, F. J., Calumet, Michigan.

- 24 specimens silver, agates and thomsonite—Calumet, Michigan (gift).

- 29 specimens ores and minerals—Lake Superior Copper District, Michigan (gift).

MARBLEHEAD LIME CO., Chicago.

- 1 specimen limestone—Marblehead, Illinois (gift).

- 10 specimens lime—Marblehead, Illinois (gift).

MARQUETTE CEMENT MFG. COMPANY, Chicago.

- 1 panoramic view of the LaSalle plant (gift).

McKEEN, F. A., East Stonelham, Maine.

- 1 specimen concretion—East Stonelham, Maine (gift).

MILLAR, A. Q., Murfreesboro, Arkansas.

- 9 specimens rocks of the diamond fields—Pike Co., Arkansas (gift).

- 1 lot minerals accompanying diamonds—Pike Co., Arkansas (gift).

- 20 specimens rough and cut garnets and peridot—Pike Co., Arkansas (gift).

MOESSNER, DR. FREDERICK, Chicago.

- 7 specimens septaria, concretions and stalagmite (gift).

- 1 specimen tufa (gift).

- 6 specimens fossils (gift).

- 13 specimens minerals (gift).

MORRISON, J. CAMPBELL, Detroit, Michigan.

- 20 specimens peat—Michigan (gift).

MOSCRIP, A. L., Chicago.

- 1 specimen chalk—Scotia, Nebraska (gift).

QUICK, ARTHUR C., Austin, Illinois.

- 3 specimens slickensided sandstone—Somerset Co., New Jersey (gift).

SCHMITZ, JOSEPH A., Chicago.

- 1 specimen petrified wood—Arizona (gift).

STANDARD OIL COMPANY (Indiana), Chicago.

- 5 specimens paraffine (gift).

- 47 specimens paraffine candles (gift).

- 135 specimens petroleum oils and greases (gift).

THOMAS, R. K., Navajo, Arizona.

- 1 specimen barite—Seven Springs, Colorado (gift).

- 5 specimens vertebrate fossils—Seven Springs, Colorado (gift).

- 40 specimens invertebrate fossils—Seven Springs, Colorado (gift).

THURBER, H. K., Grand Junction, Colorado.

- 5 specimens radium, uranium and vanadium ores—Utah and Colorado (gift).

TOLLEFSON, GEO., Chicago.

- 1 specimen malachite—Kambove Mine, Belgian Congo, Africa (gift).

UNITED STATES GYPSUM COMPANY, Chicago.

- 47 specimens illustrating the uses of gypsum (gift).

WISCONSIN MINING SCHOOL, Platteville, Wisconsin.

- 30 photographs showing all operations of typical mine property (gift).

DEPARTMENT OF ZOOLOGY

- ABBEY, E. S., Chicago.
1 roach—Chicago (gift).
- ABENDROTH, H., Chicago.
1 cricket—Illinois.
1 salamander—Wisconsin (gift).
- ADAMS, MRS. J., Wilmette, Illinois.
1 oriole—South America (gift).
- AKELEY, CARL E., New York City.
4 white-tailed deer — Michigan (gift).
- ALLEE, DR. W. C., Chicago.
1 turtle (gift).
- ARCHIBALD, W., Milwaukee, Wisconsin.
1 snake—Wisconsin (gift).
- BABCOCK, FREDERICK R., Wheaton, Illinois.
1 wart hog skull and scalp—British East Africa (gift).
- BEST, SALLIE KEEP, Chicago.
2 horned toads—California (gift).
- BIVANS, K. R., La Grange, Illinois.
50 specimens of fishes—Michigan (gift).
- BOOTH FISHERIES COMPANY, Chicago.
1 fat bass, 4 rat fishes, 4 starry flounders — Pacific Ocean (gift).
- BRADLEY, HERBERT E., Chicago.
1 snake—Wisconsin (gift).
- BURNS AND COMPANY, F. J., Chicago.
13 frogs (gift).
- CHESTERFIELD, DR. A. P., Detroit, Michigan.
2 mountain sheep—Mexico (gift).
- CLARK, B. PRESTON, Boston, Massachusetts.
30 hawk-moths—Various parts of the world (gift).
- COALE, HENRY K., Highland Park, Illinois.
2 Pacific fulmars—Washington.
3 redpoll finches—Illinois.
1 skunk—Illinois (gift).
- CONOVER, H. B., Chicago.
1 grizzly bear skull—Yukon Territory (gift).

COUNTRYMAN, MRS. C. E., Chicago.

- 1 sponge—West Coast of Florida.
1 specimen of coral—Florida (gift).

CRIMMINS, COL. M. L., San Antonio, Texas.

- 5 snakes, 2 rattle-snakes, 1 lizard.—Texas (gift).

FIELD MUSEUM OF NATURAL HISTORY.

Collected by W. I. Charlesworth:

- 1 whip-scorpion.
3 centipedes—Miami, Florida.

Collected by Dr. B. E. Dahlgren:

(Stanley Field Guiana Expedition.)

- 1 crab-eating coon, 1 opossum, 1 monkey skull, 7 bats, 6 Caiman eggs, 1 anaconda, 1 anaconda skin, 1 boa skin, 20 marine toads, 3 snakes, 2 lizards, 36 frogs, 3 small soles, 13 mammals, 25 bats, 1 bug, 1 scorpion, 1 centipede, 15 louse-flies, 130 insects—mantis, bugs, butterflies, moths, bees, etc., 6 South American catfishes—British Guiana.

Collected by W. J. Gerhard:

- 70 spiders, bugs, crickets, butterflies, beetles, flies, bees and parasites—Indiana and Illinois.

Collected by E. Liljeblad:

- 1 beetle, 11 butterflies, 1 moth—Indiana and Illinois.

Collected by S. F. Hildebrand and S. E. Meek:

- 1784 specimens of fishes—Panama.

Collected by C. C. Sanborn:

- 1 roach.
1 beetle—Illinois.

Collected by Karl P. Schmidt:

- 15 frogs, 4 snakes, 2 salamanders, 2 snakes—Indiana.

Collected by L. L. Walters:

- 1 turtle, 2 lizards, 12 snakes — Chicago.

- 15 bird-lice—Indiana.

- 5 birds, 7 mammals—Illinois and Indiana.

Collected by A. C. Weed and L. L. Pray:

- 7 birds, 2 toads, 7 frogs, 5 lizards, 1 snake—Illinois.

1080 specimens of fishes—Mississippi River, Illinois.

Collected by A. C. Weed and K. R. Bivans:

275 fishes, 4 dragonfly nymphs, 7 frogs—Illinois.

Collected by A. C. Weed and L. L. Walters:

1 turtle, 2 garter snakes, 2 frogs—Indiana.

2 garter snakes, 1 turtle—Illinois.
2 lizards, 1 spreading adder—Indiana.

14 toads, 1 tree toad, 1 garter snake, 2 lizards—Indiana.

3 frogs, 5 American toads—Illinois.

Collected by Weed, Walters and Scupham:

857 fishes, 1 frog, 4 toads, 1 turtle, 3 snakes—Illinois and Indiana.

Collected by Weed, Walters and Young:

2 frogs, 7 turtles—Indiana.

1 frog, 10 snakes—Illinois.

Collected by A. C. Weed and F. S. Young:

605 fishes—Illinois.

Collected by Alfred C. Weed:

1 water snake, 9 Cumberland terrapin, 12 map turtles, 1 soft shell turtle, 1 lizard—Illinois and Missouri.

7 turtles.

25 snakes, 12 frogs, 8 toads, 1 turtle—Illinois.

Purchases:

16 birds—Argentina and British East Africa.

9 bugs, 10 ants, 206 beetles—South Cameroon, Africa.

132 birds—Illinois and Alaska.

1 passenger pigeon—Indiana.

54 market fishes.

1 Chinese alligator—Wuhu, China.

4 green tree toads, 3 coachwhip snakes, 2 western chicken snakes—Texas.

2 black snakes, 1 leather snake, 3 Muhlenberg's turtles, 8 green frogs—Pennsylvania.

FRIESSER, J., Chicago.

3 moths—Chicago (gift).

GRILHUFFE, F. H., Chicago.

9 fishes—Chicago (gift).

GERHARD, W. J., Chicago.

1 snake—Illinois.

2 snakes—Indiana.

184 millipeds, dragonflies, caddisflies, bugs, butterflies, moths, flies, beetles, bees, wasps and parasites—Indiana and Illinois (gift).

GRAHAM, WILLIAM A., Chicago.

1 mallard duck—Illinois (gift).

GRONEMANN, C. F., Chicago.

2 beetles—Illinois (gift).

GUERET, E. N., Chicago.

1 gray-cheeked thrush skeleton—Chicago (gift).

HEEREY, WILLIAM, Chicago.

1 young alligator—Florida (gift).

HELLMAYR, DR. C. E., Chicago.

4 moths.

60 butterflies—Central Europe (gift).

HELLMAYR, MRS. C. E., Chicago.

1 English sparrow—Chicago (gift).

HINE, ASHLEY, Chicago.

8 mammals.

50 birds—Western Canada (gift).

HOWELL, A. B., Pasadena, Calif.

2 free-tailed bats—California (gift).

HOYT, N. L., Chicago.

1 case of mounted birds (gift).

ILLINOIS STATE DEPARTMENT OF GAME AND FISH,
Springfield, Illinois.

3 spoonbill earfish—Illinois.

2 turtles—Illinois (gift).

JACOBS, JOHN SHIELDS, Chicago.

1 rattle-snake (gift).

JENSEN, MARTIN, Chicago.

1 scorpion—Chicago (gift).

KAEMPFER, FRED, Chicago.

1 monkey—South America (gift).

KNICKERBOCKER, C. K., Chicago.

1 woodpecker—Minnesota (gift).

LEWY, DR. ALFRED, Chicago.

1 red-throated loon—Indiana (gift).

- LILJEBLAD, E., Chicago.
14 grasshoppers, flies, bugs and beetles—Michigan and Illinois (gift).
- LINDSEY, DR. A. W., Granville, Ohio.
2 beetles—California (gift).
- MARSHALL, BYRON C., Imboden, Arkansas.
5 insects, spiders and ticks—Arkansas (gift).
- MORDEN, W. J., Chicago.
2 mountain sheep—Yukon, Canada (gift).
- MOREHEAD, MRS. E., Chicago.
1 Sphinx moth—Georgia (gift).
- MUSEUM OF COMPARATIVE ZOOLOGY, Cambridge, Massachusetts.
50 lizards—Fiji Islands (gift).
- NARBO, DR. S., Stavanger, Norway.
8 sets of eggs.
2 nests—Norway (gift).
- NEW YORK STATE CONSERVATION COMMISSION, Albany, N. Y.
2 Chautauqua Lake muskallonge—New York (gift).
- OSGOOD, DR. WILFRED H., Chicago.
1 beetle—Illinois (gift).
- PATTERSON, IVAN D., Polo, Illinois.
1 snake—Illinois (gift).
- PRAY, LEON L., Chicago.
3 bird-lice—Michigan (gift).
- RINDSFOOS, WILLIAM, Columbus, Ohio.
2 Alaskan white sheep—Alaska (gift).
- ROTHSCHILD'S DEPT. STORE AQUARIUM, Chicago.
127 specimens of aquarium fishes.
7 snakes—Florida, Texas and Arizona.
4 salamanders, 5 frogs, 9 lizards, 17 turtles, 39 snakes—Various localities.
3 horned toads—Texas.
1 head of gar-pike—Illinois.
1 frog—Louisiana (gift).
- SAGATAS, PETER, Glencoe, Illinois.
1 hornet's nest—Illinois (gift).
- SANBORN, C. C., Chicago.
26 bird-lice, 1 louse-fly, 1 water beetle, 18 mammals, 1 black-bellied plover, 1 toad, 7 frogs, 1 blowing adder—Illinois (gift).
- SCUPHAM, E., Chicago.
3 bird-lice,
3 millipeds—Illinois (gift).
- SEELIG, J. C., Chicago.
1 tanned skin of large lizard—West Sumatra.
1 skin of slow lemur—Padang, Sumatra (gift).
- SOUTHERN BIOLOGICAL SUPPLY CO., New Orleans, Louisiana.
4 tree frogs—Louisiana (gift).
- THOMAS, R. K., Navajo, Arizona.
1 beetle.
50 shells—Arizona (gift).
- THOMPSON, G. C., Chicago.
1 grasshopper, 1 beetle, 11 moths, 15 rat fleas—Illinois (gift).
- TUNA CLUB, Catalina Island, California.
9 game fish—California (gift).
- TYRRELL, W. B., Chicago.
3 frogs—Michigan (gift).
- WALTERS, L. L., Chicago.
3 toads, 1 lizard, 111 snakes—Indiana (gift).
- WEED, A. C., Chicago.
9 flies—New York.
6 bugs, 7 centipedes, 7 millipeds, 2 beetle larvae, 1 snake—Illinois.
1 water snake skull—New York (gift).
- WOLCOTT, A. B., Chicago.
1 fly, 1 butterfly, 2 bugs, 2 ear-wigs, 3 moths, 3 beetles, 10 bees, wasps and parasites—Illinois (gift).
- YOUNG, F. S., Chicago.
5 snakes—Florida (gift).

THE LIBRARY

LIST OF DONORS AND EXCHANGES

(Accessions are by exchange, unless otherwise designated)

AFRICA:

Durban Museum.
East Africa and Uganda Natural History, Nairobi.
Geological Society, Johannesburg.
Government of Uganda Protectorate.
Institut d'Egypte, Cairo.
Ministry of Public Works, Cairo.
Rhodesia Scientific Society, Bulawayo.
Royal Society of South Africa, Cape Town.
South African Association for Advancement of Science, Cape Town.
South African Department of Agriculture, Pretoria.
South African Museum, Cape Town.

ARGENTINA:

Dirección Edición Oficial Obras Completas de Ameghino, La Plata.
Museo de La Plata.
Museo Nacional, Buenos Aires.
Sociedad Argentina de Ciencias Naturales, Buenos Aires.
Sociedad Ornithologica del Plata, Buenos Aires.
Universidad Nacional, Buenos Aires.

AUSTRALIA:

Australian Museum, Sydney.
Botanic Gardens and Government Domain, Sydney.
Commonwealth of Australia, Melbourne.
Department of Agriculture, Sydney.
Department of Agriculture, Adelaide.
Department of Agriculture, Wellington.
Department of Mines, Brisbane.
Department of Mines, Sydney.
Field Naturalists' Club, Melbourne.
Fish Commission of New South Wales, Sydney.
Forestry Commission, Sydney (gift).
Geological Survey of Western Australia, Perth.
Institute of Science and Industry, Sydney.
Linnean Society of New South Wales, Sydney.
Melbourne University.
National Herbarium, Melbourne.
Public Library, Museum and Art Gallery, Adelaide.

Public Library, Museum and National Gallery of Victoria, Melbourne.
Queensland Museum, Brisbane.
Royal Geographical Society of Australasia, Brisbane.
Royal Society of New South Wales, Sydney.
Royal Society of Queensland, Brisbane.
Royal Society of South Australia, Adelaide.
Royal Society of Tasmania, Hobart.
Royal Society of Victoria, Melbourne.
Royal Society of Western Australia, Perth.
Royal Zoological Society of New South Wales, Sydney.
South Australia Ornithological Society, Adelaide.
South Australian Museum, Adelaide.
Tasmanian Museum, Hobart.
Victoria Department of Agriculture, Melbourne.
Western Australia Geological Survey, Perth.

AUSTRIA:

Naturhistorisches Hofmuseum, Vienna.
Naturhistorisches Landesmuseum von Kärnten, Klagenfurt.
Universität, Vienna.
Zoologisch-Botanische Gesellschaft, Vienna.

BRITISH GUIANA:

Royal Agricultural and Commercial Society, Georgetown.

BELGIUM:

Académie Royale de Belgique, Brussels.
Institut Botanique Léo Errera, Brussels.
Jardin Botanique de l'Etat, Brussels.
Musée Royale d'Histoire Naturelle, Brussels.
Nederlandsche Phytopathologische (Plantenziekten) Vereeniging, Gent.
Société Royale d'Archéologie, Brussels.
Société de Botanique, Brussels.
Vereenigingen Kruidkundig Genootschap Dodonaea, Gent.



STAGE SCENE FROM CHINESE RELIGIOUS DRAMA SHOWING THE TEN PURGATORIES.

One size, feet. Hall 1.

BRAZIL:

- Biblioteca Nacional, Rio de Janeiro.
Escola Superior de Agricultura e Medicina, Veterinária, Rio de Janeiro.
Instituto Agronomico, São Paulo.
Instituto Soroterapico de Butantan, São Paulo.
Sociedade Brasileira de Ciencias, Rio de Janeiro.
Museu Nacional, Rio de Janeiro.
Jardin Botanique de Rio de Janeiro.
Society, Demerara.

BULGARIA:

- Musée Ethnographique National, Sofia.

CANADA:

- Canadian Arctic Expedition, Ottawa (gift).
Chief Game Guardian of Saskatchewan, Regina.
Commission de Géographie de Québec (gift).
Department of Agriculture, Ottawa.
Department of Agriculture, Victoria.
Department of Mines, Ottawa.
Department of Interior, Geological Survey, Ottawa.
Entomological Society of Ontario, Toronto.
Horticultural Societies, Toronto.
Ontario Minister of Education, Toronto.
Provincial Museum, Toronto.
Provincial Museum, Victoria.
Royal Canadian Institute, Toronto.
Royal Society of Canada, Ottawa.
Société de Géographie, Québec.
University of Toronto.

CENTRAL AMERICA:

- Colegio de Señoritas, San José.

CEYLON:

- Colombo Museum.

CHINA:

- Botany and Forestry Department, Hong-Kong.
Geological Survey, Peking.
Royal Asiatic Society of North China, Shanghai.
Science Society of China, Shanghai (gift).
University of Nanking.

CZECHO-SLOVAKIA:

- Deutscher Naturwissenschaftlich Medizinischer Verein für Böhmen "Lotos" Prag.

- Gesellschaft für Physiokratie in Böhmen, Prag.
Societas Entomologica Bohemica, Prag.
Universita Karlova, Prag.

DENMARK:

- Danske Kunstindustrimuseum, Copenhagen.
Naturhistorisk Forening, Copenhagen.
Société Botanique, Copenhagen.

ECUADOR:

- Academia Nacional de Historia, Quito.

FEDERATED MALAY STATES:

- Federated Malay States Museum, Kuala Lumpur.

FIJI ISLANDS:

- Fijian Society, Suva.

FINLAND:

- Abo Akademi.
Finnish Archaeological Society, Helsingfors.
Finska Museum, Helsingfors.
Societas pro Fauna et Flora Fennica, Helsingfors.

FRANCE:

- Académie des Sciences, Paris.
Congrès de Monaco, Paris (gift).
Ecole d'Anthropologie, Paris.
Ministère de l'Instruction Publique, Paris (gift).
Musée Guimet, Paris.
Muséum National d'Histoire Naturelle, Paris.
La Nature, Paris.
Société d'Etudes Scientifiques, Angers.
Société d'Histoire Naturelle, Toulon.
Société d'Horticulture, Paris.
Société de Géographie, Paris.
Société de Géographie, Toulon.
Société des Américanistes, Paris.
Société Linguistique de Paris.
Société Linnaéenne, Bordeaux.
Société Nationale d'Agriculture, Sciences et Arts, Angers.

GERMANY:

- Bayerische Akademie der Wissenschaften, Munich.
Botanischer Garten und Botanisches Museum, Berlin.
Botanischer Verein der Provinz Brandenburg, Berlin.

Deutsche Dendrologische Gesellschaft, Bonn-Poppelsdorf.
 Deutsche Gesellschaft für Anthropologie, Ethnologie und Urgeschichte, Berlin.
 Deutsche Morgenländische Gesellschaft, Leipzig.
 Deutscher Seefischerei Verein, Berlin.
 Deutsches Entomologisches Institut, Berlin.
 Geographische Gesellschaft, Hamburg.
 Gesellschaft für Erdkunde, Berlin.
 Gesellschaft zur Förderung der Gesamten Naturwissenschaften, Marburg.
 Hamburgische Universität.
 K. Museum für Volkskunde, Berlin.
 K. Universitäts Bibliothek, Marburg.
 K. Universitäts Bibliothek, Munich.
 K. Zoologisches Museum, Berlin.
 Museum für Völkerkunde, Hamburg.
 Museum für Völkerkunde, Leipzig.
 Nassauischer Verein für Naturkunde, Wiesbaden.
 Naturforschende Gesellschaft, Götting.
 Naturwissenschaftliche Gesellschaft, Dresden.
 Naturwissenschaftlicher Verein, Karlsruhe.
 Naturwissenschaftlicher Verein für Schleswig-Holstein, Kiel.
 Naturwissenschaftlicher Verein für Steiermark, Graz.
 Ornithologische Gesellschaft in Bayern, Munich.
 Physikalisch-Medizinische Societät, Erlangen.
 Rheinische Missions-Gesellschaft, Barmen.
 Senckenbergische Naturforschende Gesellschaft, Frankfurt a-M.
 Städtisches Museum für Völkerkunde, Leipzig.
 Verein für Vaterländische Naturkunde in Württemberg, Stuttgart.
 Zoologisches Museum, Hamburg.

GREAT BRITAIN:

Ashmolean Museum, Oxford.
 Birmingham Natural History and Philosophical Society.
 Bristol Museum and Gallery.
 British Museum, London.
 British Museum (Natural History), London.
 Cambridge Antiquarian Society.
 Cambridge Philosophical Society.
 Cardiff Naturalists' Society.

Challenger Society, London.
 Dove Marine Laboratory, Cullercoats.
 Dumfriesshire and Galloway Natural History and Antiquarian Society, Dumfries.
 Fisheries Board, Edinburgh.
 Geological Society, Edinburgh.
 Geological Society, Liverpool.
 Great Britain Geological Survey, London.
 Horniman Museum and Library, London.
 Hull Municipal Museum.
 Imperial Bureau of Entomology, London.
 Imperial College of Science and Technology, London.
 Japan Society of London.
 Lancashire Sea Fisheries Laboratory, Liverpool.
 Linnean Society of London.
 Liverpool Biological Society.
 London Library.
 Manchester Field Naturalists' and Archaeologists' Society.
 Manchester Geographical Society.
 Manchester Literary and Philosophical Society.
 Manchester Museum.
 Marine Biological Association, Plymouth.
 Museum of Archaeology and Ethnology, Cambridge.
 National Museum of Wales, Cardiff.
 Natural History and Philosophical Society, Croydon.
 Natural History Society, Glasgow.
 Natural History Society of Northumberland, Durham and Newcastle-on-Tyne, Newcastle.
 Royal Anthropological Institute of Great Britain and Ireland, London.
 Royal Botanic Gardens, Edinburgh.
 Royal Botanic Gardens, Kew.
 Royal Colonial Institute, London.
 Royal Geographical Society, London.
 Royal Horticultural Society, London.
 Royal Scottish Museum, Edinburgh.
 Royal Society, London.
 Royal Society of Arts, London.
 Royal Society of Edinburgh.
 South London Entomological and Natural History Society, London.
 Tring Zoological Museum.
 Victoria and Albert Museum, London.
 Wellcome Chemical Research Laboratories, London.
 Zoological Society of London.
 Zoological Society of Scotland.

HUNGARY:

Magyar Természettudományi Társulat, Budapest.
Museum Nationale Hungaricum, Budapest.

INDIA:

Anthropological Society, Bombay.
Archaeological Survey, Allahabad.
Archaeological Survey, Calcutta.
Archaeological Survey, Eastern Circle, Patna.
Archaeological Survey, Frontier Circle, Peshawar.
Archaeological Survey Department, Madras.
Archaeological Survey of Burma, Lahore.
Asiatic Society of Bengal, Calcutta.
Bihar and Orissa Research Society, Patna.
Department of Agriculture, Bombay.
Department of Agriculture, Madras.
Department of Agriculture, Poona.
Department of Agriculture, Puna.
Geological Survey, Calcutta.
Government of India, Calcutta.
Government Cinchona Plantation, Calcutta.
Government Museum, Madras.
Indian Museum, Calcutta.
Journal of Indian Botany, Madras.
National Indian Association, Calcutta (gift).
Royal Asiatic Society, Straits Branch, Singapore.
Superintendent of Archaeology, Kashmir.
Superintendent of Archaeology H. E. H. Nizam's Dominions, Hyderabad.
University of Calcutta.
Zoological Survey of India, Calcutta.

IRELAND:

Belfast Naturalists' Field Club.
Department of Agriculture, Scientific Investigations, Dublin.
Geological Survey, Dublin.
National Museum of Science and Art, Dublin.
Natural History and Philosophical Society, Belfast.
Royal Irish Academy, Dublin.
Royal Dublin Society.

ITALY:

Accademia delle Scienze Fisiche e Matematiche, Naples.
Istituto Botanica, Università di Pavia.

Istituto Geografico de Agostini, Novara.
Musei Zoologiae Anatomia Comparata, Turin.
R. Accademia Nazionale dei Lincei, Rome.
R. Accademia delle Scienze di Torino.
R. Orto Botanico Giardino Coloniale, Palermo.
R. Scuola Superiore di Agricoltura, Portici.
R. Società Geografica Italiana, Rome.
Società di Scienze Naturali ed Economiche, Palermo.
Società Italiana d'Antropologia e Etnologia, Florence.
Società Italiana de Scienze Naturali, Milan.
Società Toscana di Scienze Naturali, Pisa.

JAPAN:

Anthropological Society, Tokyo.
Educational Museum, Tokyo.
Geological Society, Tokyo.
Imperial University, Taihoku.
Imperial University of Tokyo, College of Science.
Ornithological Society, Tokyo.
Tokyo Botanical Society.

JAVA:

Bataviaasch Genootschap van Kunsten en Wetenschappen, Batavia.
Department of Agriculture, Buitenzorg.
Encyclopaedisch Bureau, Weltevreden.
Jardin Botanique, Weltevreden.
Java Instituut, Weltevreden.
K. Natuurkundige Vereeniging in Nederlandsch-Indie, Weltevreden.

KOREA:

Government General of Chosen, Keijo.

MEXICO:

Instituto Geologico de Mexico.
Museo Nacional de Arqueologia, Historia y Etnografia, Mexico.
Secretaria de Agricultura y Fomento. Direccion de Antropologia, Mexico.
Sociedad Cientifica "Antonio Alzate," Mexico.

NETHERLANDS:

Koloniaal Instituut Amsterdam.
Koloniaal Museum te Haarlem.

K. Akademie van Wetenschappen.
Amsterdam.

K. Bibliotheek, Hague.

K. Instituut voor de Taal-Land-en
Volkenkunde van Nederlandsch
Indië, The Hague.

K. Nederlandsch Aardijkundig Ge-
nootschap, Amsterdam.

Museum voor Land-en Volkenkunde
en Maritiem Museum "Prinz
Hendrik," Rotterdam.

Nederlandsche Dierkunde Vereenig-
ing, Leiden.

Nederlandsche Phytopathologische
Vereeniging, Wageningen.

Rijks Ethnographisch Museum, Lei-
den.

Rijks Hoogere Land-Tuin-en Bosch-
bouwschool, Wageningen.

Rijks Museum van Natuurlijke His-
torie, Leiden.

Universiteit van Amsterdam, Biblio-
theek.

NEW ZEALAND:

Acclimatisation Society, Wellington.
Auckland Institute and Museum,
Wellington.

Canterbury Museum, Christchurch.
Department of Agriculture, Wellin-
gton.

Department of Mines, Wellington.

Dominion Museum, Wellington.

New Zealand Board of Science and
Art, Wellington.

New Zealand Institute, Wellington.

NORWAY:

Bergen Museum.

Physiographiske Forening i Chris-
tiania.

Tromsø Museum.

PERU:

Biblioteca Nacional, Lima.

Cuerpo de Ingenieros de Minas,
Lima.

Cuzco Universidad.

Instituto Histórico, Lima.

Sociedad Geográfica, de Lima.

POLAND:

Musei Polonici Historiæ Naturales,
Warsaw.

PORTUGAL:

Société Portugaise des Sciences
Naturelles, Lisbon.

Universidade. Instituto de Anatomia
e Anthropologia, Lisbon.

RUSSIA:

Académie Impériale des Sciences,
Petrograd.

Musée d'Anthropologie et d'Ethno-
graphie, Petrograd.

Universität Dorpatensis.

SPAIN:

Collegio de Pasaje, La Guardia.

Institució Catalana d'Historia Na-
tural, Barcelona.

Instituto General y Técnico, Val-
encia.

Junta de Ciencias Naturals, Bar-
celona.

Museo Nacional de Ciencias Na-
turales, Madrid.

R. Academia de Ciencias y Artes,
Barcelona.

R. Academia de Ciencias Exactas,
Físicas y Naturales, Madrid.

Sociedad Española de Historia Na-
tural, Madrid.

SWEDEN:

Humanistiska Vetenskapsfundet, Lund.
K. Biblioteket, Stockholm.

K. Svenska Vetenskapsakademien,
Stockholm.

K. Vetenskaps-och Vitterhets Sam-
hälle, Göteborg.

K. Vitterhets Historie och Antikvi-
tets Akademien, Stockholm.

Lunds Universitet.

Svenska Sällskapet för Antropologi
och Geografi, Stockholm.

Sveriges Offentliga Bibliotek, Stock-
holm.

Universitet. Biblioteket, Upsala.

SWITZERLAND:

Botanisches Museum, Zürich.

Historisches Museum, Bern.

Naturforschende Gesellschaft, Basel.

Naturforschende Gesellschaft, Bern.

Ostschweizerische Geograph-Com-
mercielle Gesellschaft, St. Gallen.

Société de Physique et Historie Na-
turelle, Geneva.

Société Entomologique, Bern.

Société Fréhelégéenne des Sciences

Naturelles, Fribourg.

Société Neuchâteloise de Géographie.

VENEZUELA:

Cultura Venezolana, Caracas.

WEST INDIES:

Academia Nacional de Artes y
Letras, Havana.

Agricultural Experiment Station,
Porto Rico.
Biblioteca Nacional, Havana.
Department of Agriculture of Ja-
maica, Kingston.
Imperial Department of Agriculture,
Barbados.
Oficina Nacional del Censo, Havana.
Trinidad and Tobago Department of
Agriculture, Port of Spain.
Universidad de Habana.

Ballai, Karl, Budapest (gift).
Bertoni, Moises S., Parana.
Roman, Eric, Buenos Aires (gift).
Brown, A. R., Cape Town (gift).
Carpenter, G. H., Dublin.
Dunod, H., Paris.
Fyson, P. F., Madras.
Gamio, Manuel, Mexico (gift).
Gleerup, C. W. K., Lund.
Hartland, Sidney, Gloucester.
Herdman, William, Liverpool.
Hill-Tout, Charles, Vancouver, (gift).
Huard, A., Quebec.
Jenness, D., Ottawa.
Lévy-Bruhl, L., Paris.
Gutes, Félix F., Buenos Aires.
Preuss, K., Berlin.
Rassers, W. H., Leiden (gift).
Rinne, F., Leipzig (gift).
Rivet, P., Paris.
Smethlage, E., Berlin (gift).
Tavares, J. S., Braga.

ALABAMA:

Agricultural Experiment Station,
Auburn.
Anthropological Society, Montgom-
ery.

ARIZONA:

Agricultural Experiment Station,
Tucson.

CALIFORNIA:

Agricultural Experiment Station,
Berkeley.
California Academy of Sciences,
San Francisco.
Cooper Ornithological Club, Holly-
wood.
Pomona College, Claremont.
San Diego Society of Natural
History.
Scripps Institution of Biological Re-
search, La Jolla.
Stanford University.
State Board of Forestry, Sacra-
mento.
State Mining Bureau, Sacramento.
University of California, Berkeley.

World Metric Standardization Coun-
cil, San Francisco.

COLORADO:

Bureau of Mines, Denver.
Colorado College, Colorado Springs.
Colorado Museum of Natural His-
tory, Denver.
Colorado Scientific Society, Denver.
Colorado University, Boulder.
State Historical and Natural History
Society, Denver.

CONNECTICUT:

Agricultural Experiment Station,
New Haven.
American Oriental Society, New
Haven.
Connecticut Academy of Arts and
Sciences, New Haven.
Hartford Public Library.
Peabody Museum, New Haven.
Wesleyan University, Middletown.
Yale University, New Haven.

DELAWARE:

Agricultural Experiment Station,
Newark.

FLORIDA:

Florida Geological Survey, Talla-
hassee.

GEORGIA:

Geological Survey, Atlanta.

HAWAII:

Agricultural Experiment Station,
Honolulu.
Bernice Pauahi Bishop Museum,
Honolulu.
Board of Commissions of Agricul-
ture and Forestry, Honolulu.
Hawaiian Entomological Society,
Honolulu.
Hawaiian Historical Society, Hono-
lulu.

IDAHO:

Mining Industry, Boise.
University of Idaho, Moscow.

ILLINOIS:

Agricultural Experiment Station,
Urbana.
Art Institute of Chicago.
Audubon Society, Chicago.
Board of Education, Chicago.
Chicago Public Library.
Division of Natural History Survey,
Urbana.
Hardwood Record, Chicago (gift).
John Crerar Library, Chicago.

Lake Forest College.
 Newberry Library, Chicago.
 Northwestern University, Evanston.
 Open Court Publishing Company, Chicago.
 State Academy of Science, Springfield.
 State Board of Agriculture, Springfield.
 State Geological Survey, Urbana.
 State Historical Library, Springfield.
 State Water Survey, Urbana.
 Sweet, Wallach and Company, Chicago (gift).
 University of Chicago.
 University of Illinois, Urbana.
 West Chicago Park Commissioners.

INDIANA:

Academy of Science, Indianapolis.
 Department of Conservation, Indianapolis.
 Indiana University, Bloomington.
 Legislative Reference Bureau, Indianapolis.
 Purdue University, Lafayette.
 University of Notre Dame.

IOWA:

Iowa State College, Ames.
 University of Iowa, Iowa City.

KANSAS:

Agricultural Experiment Station, Manhattan.
 State Board of Agriculture, Topeka.
 University of Kansas, Lawrence.

KENTUCKY:

Agricultural Experiment Station, Louisville.
 Department of Geology and Forestry, Frankfort.

LOUISIANA:

Agricultural Experiment Station, Baton Rouge.
 Department of Conservation, New Orleans.
 Louisiana State Museum, New Orleans.

MAINE:

Agricultural Experiment Station, Orono.
 Bowdoin College, Brunswick.
 Portland Public Library.

MASSACHUSETTS:

Agricultural Experiment Station, Amherst.

American Antiquarian Society, Worcester.
 Boston Public Library.
 Boston Society of Natural History.
 Department of Agriculture, Division of Ornithology, Boston.
 Essex Institute, Salem.
 Harvard College. Museum of Comparative Zoology, Cambridge.
 Harvard University. Arnold Arboretum, Jamaica Plain.
 Harvard University. Gray Herbarium, Cambridge.
 Massachusetts Horticultural Society, Boston.
 Museum of Fine Arts, Boston.
 New Bedford Free Public Library.
 Peabody Institute, Peabody.
 Peabody Museum, Cambridge.
 Phillips Academy, Andover.
 Salem Public Library.
 Smith College, Northampton.
 Springfield City Library Association.
 Springfield Natural History Museum.
 Tufts College.
 Williams College, Williamstown.

MICHIGAN:

Agricultural Experiment Station, Agricultural College.
 Detroit Institute of Art.
 Geological and Natural History Survey, Lansing.
 Grand Rapids Public Library.
 Michigan College of Mines, Houghton.
 Michigan State Library, Lansing.
 State Board of Agriculture, Lansing.
 State Board of Library Commissions, Lansing.
 University of Michigan, Ann Arbor.

MINNESOTA:

Agricultural Experiment Station, University Farm.
 Minneapolis Institute of Arts.
 Minnesota Historical Society, Saint Paul.
 Saint Paul Institute.
 University of Minnesota, Minneapolis.

MISSISSIPPI:

Agricultural Experiment Station, Agricultural College.
 State Geological Survey, Jackson (gift).

MISSOURI:

Agricultural Experiment Station, Columbia.

City Art Museum, Saint Louis.
Missouri Botanic Garden, Saint Louis.
Missouri Historical Society, Columbia.
Saint Louis Public Library.
Saint Louis University.
University of Missouri. School of Mines, Rolla.
Washington University, Saint Louis.

MONTANA:

University of Montana, Missoula.

NEBRASKA:

University of Nebraska, Lincoln.

NEVADA:

Agricultural Experiment Station, Carson City.

NEW JERSEY:

Agricultural Station, Trenton.
Department of Conservation and Development, Trenton.
Newark Museums Association.
Princeton University.
Stevens Institute, Hoboken.

NEW MEXICO:

New Mexico Museum, Santa Fe.

NEW YORK:

Agricultural Experiment Station, Geneva.
Amalgamated Press, New York City.
American Geographical Society, New York City.
American Institute of Mining Engineers, New York City.
American Museum of Natural History, New York City.
Asia Publishing Company, New York City.
Brooklyn Botanic Garden.
Brooklyn Institute of Arts and Sciences.
Buffalo Society of Natural Sciences.
Carnegie Foundation for the Advancement of Teaching, New York City (gift).
Cooper Union for the Advancement of Science and Art, New York City.
Cornell University, Ithaca.
Forest and Stream Publishing Company, New York City.
Inter-American Magazine, New York City (gift).
Japan Society, New York City.
Metropolitan Museum of Art, New York City.

Museum of the American Indian, New York City.
New York Academy of Sciences, New York City.
New York Botanical Garden, New York City.
New York Historical Society, New York City.
Pratt Institute Free Library, New York City.
Public Library, New York City.
Rockefeller Foundation, New York City.
State College of Forestry, Syracuse.
State Library, Albany.
State Museum, Albany.
Staten Island Institute of Arts and Sciences, New York City.
Stone Publishing Company, New York City.
University of the State of New York, Albany.
Zoological Society, New York City.

NORTH CAROLINA:

Elisha Mitchell Scientific Society, Chapel Hill.

NORTH DAKOTA:

University of North Dakota, University.

OHIO:

Agricultural Experiment Station, Wooster.
Cincinnati Museum Association.
Cleveland Museum of Art.
Cleveland Public Library.
Dehison University, Granville.
Geological Survey, Columbus.
State Archaeological and Historical Society, Columbus.
State University, Columbus.
University of Cincinnati.
Wilson Ornithological Club, Oberlin.

OREGON:

Agricultural Experiment Station, Corvallis.
University of Oregon, Eugene.

PENNSYLVANIA:

American Philosophical Society, Philadelphia.
Aquatic Life (gift).
Association of Engineering Societies, Philadelphia.
Bryn Mawr College.
Carnegie Institute, Pittsburgh.
Carnegie Library, Pittsburgh.
Carnegie Museum, Pittsburgh.
Delaware County Institute of Science, Media.

Dropsie College, Philadelphia.
 Engineers' Society of Western Pennsylvania, Pittsburgh.
 Franklin Institute, Philadelphia.
 Numismatic and Antiquarian Society, Philadelphia.
 Pennsylvania Museum and School of Industrial Art, Philadelphia.
 Philadelphia Academy of Natural Society, Wilkes-Barre.
 Wyoming Historical and Geological Sciences.
 Philadelphia College of Pharmacy.
 Philadelphia Commercial Museum.
 Sullivant Moss Society, Pittsburgh.
 University of Pennsylvania, Philadelphia.
 University of Pennsylvania, Museum, Philadelphia.
 Wagner Free Institute of Science, Philadelphia.

PHILIPPINE ISLANDS:

Bureau of Education, Manila.
 Department of Agriculture, Manila.
 Department of Agriculture and Natural Resources, Manila.
 Department of Interior, Bureau of Science, Manila.

RHODE ISLAND:

Park Museum, Providence.

SOUTH CAROLINA:

Charleston Museum.

SOUTH DAKOTA:

Agricultural Experiment Station, Brookings.
 Geological and Natural History Survey, Vermilion.

TEXAS:

Agricultural Experiment Station, College Station.
 University of Texas, Austin.

VERMONT:

Agricultural Experiment Station, Burlington.
 State Forester, Montpelier.

VIRGIN ISLANDS:

Agricultural Experiment Station, St. Croix.

VIRGINIA:

State Library, Richmond.
 University of Virginia, Charlottesville.
 Virginia Geological Survey, Charlottesville.
 Virginia State Forester, Charlottesville.

WASHINGTON:

Department of Conservation and Development, Division of Geology, Olympia.
 Pacific Northwest Bird and Mammal Club, Seattle.
 Washington Geological Survey, Pullman.
 Washington University, Seattle.
 Washington University, Historical Society, Seattle.

WASHINGTON, D. C.:

American Mining Congress.
 Carnegie Institution of Washington (gift).
 Library of Congress.
 National Academy of Sciences.
 National Education Association (gift).
 National Zoological Park.
 Pan American Union.
 Smithsonian Institute.
 United States Government.
 United States National Museum.

WEST VIRGINIA:

West Virginia University, Morgantown.

WISCONSIN:

Agricultural Experiment Station, Madison.
 Beloit College.
 Geological and Natural History Survey, Madison.
 Public Museum of Milwaukee.
 State Horticultural Society, Madison.
 University of Wisconsin, Madison.

Ayer, Edward E., Chicago (gift).
 Arthur, J. C., Lafayette.
 Baker, Frank Collins, Urbana.
 Barnes, Claude T., Salt Lake City (gift).
 Boas, Franz, New York City.
 Beyer, George E., New Orleans.
 Casey, Thomas L., Washington (gift).
 Chalmers, W. J., Chicago (gift).
 Cockerell, T. D. A., Boulder.
 Conover, H. B., Chicago, (gift).
 Cook, Melville T., New Brunswick.
 Crook, A. R., Springfield.
 Davies, D. C., Chicago (gift).
 Derby, Mrs. William M. Jr., Chicago (gift).
 Eigenmann, Carl H., Bloomington.
 Evans, Alexander W., New Haven.
 Farwell, Oliver A., Detroit (gift).
 Field, Stanley, Chicago (gift).
 Garland Manufacturing Company, Saco (gift).
 Gerhard, William J., Chicago (gift).



TYPE OF CASE LOANED TO CHICAGO SCHOOLS
BY THE H. W. HARRIS PUBLIC SCHOOL EXTENSION OF FIELD MUSEUM OF NATURAL HISTORY.

Glessner, John J., Chicago (gift).
Harris, G., Ithaca.
Harrison, William J., Chicago (gift).
Hay, Oliver P., Washington.
Hedlicka, Ales, Washington.
Hubbs, Carl L., Ann Arbor.
Kihun, W. Langdon, New York City (gift).
Laufer, Berthold, Chicago (gift).
Le Breton, Thomas L., Ambassador of
 Argentina, Washington (gift).
Lewis, A. B., Chicago (gift).
Liljeblad, Emil, Chicago (gift).
Millsbaugh, C. F., Chicago (gift).
Morse, Edward S., Salem.
Myer, Albert C., Philadelphia (gift).

Osgood, W. H., Chicago (gift).
Packard, E. L., Eugene (gift).
Parish-Watson, New York City (gift).
Penrose, R. A. F., Philadelphia.
Richter, Gisela M. A., New York City
 (gift).
Riggs, Mrs. Elmer S., Chicago (gift).
Sargent, C. S., Jamaica Plain (gift).
Sterce, Henry M., Washington (gift).
Tompkins-Kiel Marble Company, New
 York City (gift).
Verner, S. P.,
Weiss, Harry B., New Brunswick.
Wicker, Carolyn, Chicago (gift).
Wolcott, A. B., Chicago (gift).
Zimmer, John T., Chicago (gift).

ARTICLES OF INCORPORATION.

STATE OF ILLINOIS.

DEPARTMENT OF STATE

WILLIAM H. HINRICHSEN, *Secretary of State.*

TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETING:

Whereas, a Certificate duly signed and acknowledged having been filed in the office of the Secretary of State, on the 16th day of September, A. D. 1893, for the organization of the COLUMBIAN MUSEUM OF CHICAGO, under and in accordance with the provisions of "An Act Concerning Corporations," approved April 18, 1872, and in force July 1, 1872, and all acts amendatory thereof, a copy of which certificate is hereto attached,

Now, therefore, I, William H. Hinrichsen, Secretary of State of the State of Illinois, by virtue of the powers and duties vested in me by law, do hereby certify that the said COLUMBIAN MUSEUM OF CHICAGO is a legally organized Corporation under the laws of this State.

In Testimony Whereof, I hereto set my hand and cause to be affixed the Great Seal of State. Done at the City of Springfield, this 16th day of September, in the year of our Lord one thousand eight hundred and ninety-three, and of the Independence of the United States the one hundred and eighteenth.

W. H. HINRICHSEN,
Secretary of State.

[SEAL]

TO HON. WILLIAM H. HINRICHSEN,

SECRETARY OF STATE:

SIR:

We, the undersigned citizens of the United States, propose to form a corporation under an act of the General Assembly of the State of Illinois, entitled "An Act Concerning Corporations," approved April 18, 1872, and all acts amendatory thereof; and that for the purposes of such organization we hereby state as follows, to-wit:

1. The name of such corporation is the "COLUMBIAN MUSEUM OF CHICAGO."

2. The object for which it is formed is for the accumulation and dissemination of knowledge, and the preservation and exhibition of objects illustrating Art, Archaeology, Science and History.

3. The management of the aforesaid museum shall be vested in a Board of FIFTEEN (15) TRUSTEES, five of whom are to be elected every year.

4. The following named persons are hereby selected as the Trustees for the first year of its corporate existence:

Edward E. Ayer, Charles B. Farwell, George E. Adams, George R. Davis, Charles L. Hutchinson, Daniel H. Burnham, John A. Roche, M. C. Bullock, Emil G. Hirsch, James W. Ellsworth, Allison V. Armour, G. F. Aldis, Edwin Walker, John C. Black and Frank W. Gonsausis.

5. The location of the Museum is in the City of Chicago, County of Cook, and State of Illinois.

(Signed),

George E. Adams, C. B. Farwell, Sidney C. Eastman, F. W. Putnam, Robert McCurdy, Andrew Peterson, L. J. Gage, Charles L. Hutchinson, Ebenezer Buckingham, Andrew McNally, Edward E. Ayer, John M. Clark, Herman H. Kohlisaat, George Schneider, Henry H. Getty, William R. Harper, Franklin H. Head, E. G. Keith, J. Irving Pearce, Azel F. Hatch, Henry Wade Rogers, Thomas B. Bryan, L. Z. Leiter, A. C. Bartlett, A. A. Sprague, A. C. McClurg, James W. Scott, Geo. F. Bissell, John R. Walsh, Chas. Fitzsimmons, John A. Roche, E. B. McCagg, Owen F. Aldis, Ferdinand W. Peck, James H. Dole, Joseph Stockton, Edward B. Butler, John McConnell, R. A. Waller, H. C. Chatfield-Taylor, A. Crawford, Wm. Sooy Smith, P. S. Peterson, John C. Black, Jno. J. Mitchell, C. F. Gunther, George R. Davis, Stephen A. Forbes, Robert W. Patterson, Jr., M. C. Bullock, Edwin Walker, George M. Pullman, William E. Curtis, James W. Ellsworth, William E. Hale, Wm. T. Baker, Martin A. Ryerson, Huntington W. Jackson, N. B. Ream, Norman Williams, Milville E. Stone, Bryan Lathrop, Eliphalet W. Blatchford, Philip D. Armour.

STATE OF ILLINOIS }
COOK COUNTY } ss.

I, G. R. MITCHELL, a NOTARY PUBLIC in and for said County, do hereby certify that the foregoing petitioners personally appeared before me and acknowledged severally that they signed the foregoing petition as their free and voluntary act for the uses and purposes therein set forth.

Given under my hand and notarial seal this 14th day of September, 1903.

G. R. MITCHELL,

[SEAL]

NOTARY PUBLIC, COOK COUNTY, ILL.

CHANGE OF NAME.

Pursuant to a resolution passed at a meeting of the corporate members held the 25th day of June, 1894, the name of the COLUMBIAN MUSEUM was changed to FIELD COLUMBIAN MUSEUM. A certificate to this effect was filed June 26, 1894, in the office of the Secretary of State for Illinois.

CHANGE OF NAME.

Pursuant to a resolution passed at a meeting of the corporate members held the 8th day of November, 1905, the name of the FIELD COLUMBIAN MUSEUM was changed to FIELD MUSEUM OF NATURAL HISTORY. A certificate to this effect was filed November 10, 1905, in the office of the Secretary of State for Illinois.

CHANGE IN ARTICLE 3.

Pursuant to a resolution at a meeting of the corporate members held the 16th day of May, 1920, the management of FIELD MUSEUM OF NATURAL HISTORY shall be invested in a Board of TWENTY-ONE (21) TRUSTEES, who shall be elected in such manner and for such time and term of office as may be provided for by the By-Laws. A certificate to this effect was filed May 21, 1920, in the office of the Secretary of State for Illinois.

AMENDED BY-LAWS

(FEBRUARY 20, 1922.)

ARTICLE I.

MEMBERS

SECTION 1. Members shall be of seven classes, Corporate Members, Honorary Members, Patrons, Life Members, Associate Members, Sustaining Members, and Annual Members.

SECTION 2. The Corporate Members shall consist of the persons named in the articles of incorporation, and of such other persons as shall be chosen from time to time by the Board of Trustees at any of its meetings, upon the recommendation of the Executive Committee; provided, that such person named in the articles of incorporation shall, within ninety days from the adoption of these By-Laws, and persons hereafter chosen as Corporate Members shall, within ninety days of their election, pay into the treasury the sum of twenty (\$20.00) dollars or more. Corporate Members becoming Life Members, Patrons or Honorary Members shall be exempt from dues. Annual meetings of said Corporate Members shall be held at the same place and on the same day that the annual meeting of the Board of Trustees is held.

SECTION 3. Honorary Members shall be chosen by the Board from among persons who have rendered eminent service to science, and only upon unanimous nomination of the Executive Committee. They shall be exempt from all dues.

SECTION 4. Patrons shall be chosen by the Board upon recommendation of the Executive Committee from among persons who have rendered eminent service to the Museum. They shall be exempt from all dues, and, by virtue of their election as Patrons, shall also be Corporate Members.

SECTION 5. Any person paying into the treasury the sum of five hundred (\$500.00) dollars, at any one time, shall, upon the unanimous vote of the Board, become a Life Member. Life Members shall be exempt from all dues, and shall enjoy all the privileges and courtesies of the Museum that are accorded to members of the Board of Trustees.

SECTION 6. Any person paying into the treasury of the Museum the sum of one hundred (\$100.00) dollars, at any one time, shall upon the unanimous vote of the Board, become an Associate Member. Associate Members shall be entitled to: tickets admitting member and members of family, including non-resident home guests; all publications of the Museum, if so desired; reserved seats to all lectures and entertainments under the auspices of the Museum, provided reservation is requested in advance; and admission of holder of membership and accompanying party to all special exhibits and Museum functions day or evening.

SECTION 7. Sustaining Members shall consist of such persons as are selected from time to time by the Board of Trustees at any of its meetings, and who shall pay an annual fee of twenty-five (\$25.00) dollars, payable within thirty days after notice of election and within thirty days after each recurring annual date. This Sustaining Membership entitles the member to free admission for the member and family to Museum on any day and allows 25 admission coupons,

which may be used by any one, the Annual Report and such other Museum documents or publications as may be requested in writing. When a Sustaining Member has paid the annual fee of \$25.00 for six years, such member shall be entitled to become an Associate Member.

SECTION 8. Annual Members shall consist of such persons as are selected from time to time by the Board of Trustees at any of its meetings, and who shall pay an annual fee of ten (\$10.00) dollars, payable within thirty days after each recurring annual date. An Annual Membership shall entitle the member to a card of admission for the member and family during all hours when the Museum is open to the public, and free admission for the member and family to all Museum lectures or entertainments. This membership will also entitle the holder to the courtesies of the membership privileges of every Museum of note in the United States and Canada, so long as the existing system of cooperative interchange of membership tickets shall be maintained, including tickets for any lectures given under the auspices of any of the Museums during a visit to the cities in which the cooperative museums are located.

ARTICLE II.

BOARD OF TRUSTEES.

SECTION 1. The Board of Trustees shall consist of twenty-one members. The respective members of the Board now in office, and those who shall hereafter be elected, shall hold office during life. Vacancies occurring in the Board shall be filled at a regular meeting of the Board, upon the nomination of the Executive Committee made at a preceding regular meeting of the Board, by a majority vote of the members of the Board present.

SECTION 2. Regular meetings of the Board shall be held monthly. Special meetings may be called at any time by the President, and shall be called by the Secretary upon the written request of three Trustees. Five Trustees shall constitute a quorum, except for the election of officers or the adoption of the Annual Budget, when seven Trustees shall be required, but meetings may be adjourned by any less number from day to day, or to a day fixed, previous to the next regular meeting.

SECTION 3. Reasonable written notice, designating the time and place of holding meetings, shall be given by the Secretary.

ARTICLE III.

HONORARY TRUSTEES.

SECTION 1. As a mark of respect, and in appreciation of services performed for the Institution, those Trustees who by reason of inability, on account of change of residence, or for other cause or from indisposition to serve longer in such capacity shall resign their place upon the Board, may be elected, by a majority of those present at any regular meeting of the Board, an Honorary Trustee for life. Such Honorary Trustee will receive notice of all meetings of the Board of Trustees, whether regular or special, and will be expected to be present at all such meetings and participate in the deliberations thereof, but an Honorary Trustee shall not have the right to vote.

ARTICLE IV.

OFFICERS.

SECTION 1. The officers shall be a President, a First Vice-President, a Second Vice-President, a Third Vice-President, a Secretary, an Assistant Secretary and a Treasurer. They shall be chosen by ballot by the Board of Trustees, a majority of those present and voting being necessary to elect. The President,

the First Vice-President, the Second Vice-President, and the Third Vice-President shall be chosen from among the members of the Board of Trustees. The meeting for the election of officers shall be held on the third Monday of January of each year, and shall be called the Annual Meeting.

SECTION 2. The officers shall hold office for one year, or until their successors are elected and qualified, but any officer may be removed at any regular meeting of the Board of Trustees by a vote of two-thirds of all the members of the Board. Vacancies in any office may be filled by the Board at any meeting.

SECTION 3. The officers shall perform such duties as ordinarily appertain to their respective offices, and such as shall be prescribed by the By-Laws, or designated from time to time by the Board of Trustees.

ARTICLE V.

THE TREASURER.

SECTION 1. The Treasurer shall be custodian of the funds of the Corporation except as hereinafter provided. He shall make disbursements only upon warrants drawn by the Director and countersigned by the President. In the absence or inability of the Director, warrants may be signed by the chairman of the Finance Committee, and in the absence or inability of the President, may be countersigned by one of the Vice-Presidents. But no warrant shall be issued, except in conformity with a regularly prepared voucher, giving the name of the payee and stating the occasion for the expenditure, and verified and approved as hereinafter prescribed. It shall be no part of the duties of the Treasurer to see that the warrants have been issued in conformity with such vouchers.

SECTION 2. The securities and moneys of title belonging to the corporation shall be placed in the custody of some Trust Company of Chicago to be designated by the Board of Trustees, which Trust Company shall collect the income and principal of said securities as the same become due, and pay same to the Treasurer, except as hereinafter provided. Said Trust Company shall allow access to and deliver any or all securities or moneys of title to the joint order of the following officers, namely The President or one of the Vice-Presidents, jointly with the Chairman, or one of the Vice-Chairmen, of the Finance Committee of the Museum.

SECTION 3. The Treasurer shall give bond in such amount, and with such sureties as shall be approved by the Board of Trustees.

SECTION 4. All vouchers executed for the payment of liabilities incurred in the administration of the Museum, shall be verified by the Auditor, and approved for payment by the Director, and a member of the Executive Committee. All vouchers executed for expenditures for the construction or reconstruction of the Museum building, or buildings, shall be verified by the Auditor and approved for payment by the Chairman of the Building Committee. All vouchers executed in connection with the investments of the Corporation, or, in any way having to do with the endowment funds of the Corporation, shall be verified by the Auditor and approved for payment by the Chairman of the Finance Committee.

SECTION 5. The Harris Trust & Savings Bank of Chicago shall be Custodian of "The N. W. Harris Public School Extension of Field Museum" fund. The bank shall make disbursements only upon warrants drawn by the Director and countersigned by the President. In the absence or inability of the Director, warrants may be signed by the Chairman of the Finance Committee, and in the absence or inability of the President, may be countersigned by the Vice-Presidents. But no warrant shall be issued, except in conformity with a regularly prepared voucher, giving the name of the payee and stating the occasion for the expenditure, and verified and approved by the Auditor, the Director, and a

member of the Executive Committee. It shall be no part of the duties of the said Custodian to see that the warrants have been issued in conformity with such vouchers.

ARTICLE VI.

THE DIRECTOR

SECTION 1. The Board of Trustees shall elect a Director of the Museum, who shall remain in office until his successor shall be elected. He shall have immediate charge and supervision of the Museum, and shall control the operations of the Institution, subject to the authority of the Board of Trustees and its Committees. The Director shall be the official medium of communication between the Board, or its Committees, and the scientific staff and maintenance force.

SECTION 2. There shall be four scientific departments of the Museum—Anthropology, Botany, Geology and Zoology; each under the charge of a Curator, subject to the authority of the Director. The Curators shall be appointed by the Board upon the recommendation of the Director, and shall serve during the pleasure of the Board. Subordinate staff officers in the scientific departments shall be appointed and removed by the Director upon the recommendation of the Curators of the respective Departments. The Director shall have authority to employ and remove all other employees of the Museum.

SECTION 3. The Director shall make report to the Board at each regular meeting, recounting the operations of the Museum for the previous month. At the Annual Meeting, the Director shall make an Annual Report, reviewing the work for the previous year, which Annual Report shall be published in pamphlet form for the information of the Trustees and Members, and for free distribution in such number as the Board may direct.

ARTICLE VII.

AUDITOR

SECTION 1. The Board shall appoint an Auditor, who shall hold his office during the pleasure of the Board. He shall keep proper books of account, setting forth the financial condition and transactions of the Corporation, and of the Museum, and report thereon at each regular meeting, and at such other times as may be required by the Board. He shall certify to the correctness of all vouchers for the expenditure of the money of the Corporation.

ARTICLE VIII.

COMMITTEES.

SECTION 1. There shall be five Committees, as follows: Finance, Building, Auditing, Pension and Executive.

SECTION 2. The Finance Committee shall consist of five members, the Auditing and Pension Committees shall each consist of three members, and the Building Committee shall consist of five members. All members of these four Committees shall be elected by ballot by the Board at the Annual Meeting, and shall hold office for one year, and until their successors are elected and qualified. In electing the members of these Committees, the Board shall designate the Chairman and Vice-Chairman by the order in which the members are named in the respective Committee; the first member named shall be Chairman, the second named the Vice-Chairman, and the third named, Second Vice-chairman, succession to the Chairmanship being in this order in the event of the absence or disability of the Chairman.

SECTION 3. The Executive Committee shall consist of the President of the

Board, the Chairman of the Finance Committee, the Chairman of the Building Committee, the Chairman of the Auditing Committee, the Chairman of the Pension Committee, and three other members of the Board to be elected by ballot at the Annual Meeting.

SECTION 4. Four members shall constitute a quorum of the Executive Committee, and in all standing Committees two members shall constitute a quorum. In the event that, owing to the absence or inability of members, a quorum of the regularly elected members cannot be present at any meeting of any Committee, then the Chairman thereof, or his successor, as herein provided, may summon any members of the Board of Trustees to act in place of the absentees.

SECTION 5. The Finance Committee shall have supervision of investing the endowment and other permanent funds of the Corporation, and the care of such real estate as may become its property. It shall have authority to invest, sell, and reinvest funds, subject to the approval of the Board.

SECTION 6. The Building Committee shall have supervision of the construction, reconstruction, and extension of any and all buildings used for Museum purposes.

SECTION 7. The Executive Committee shall be called together from time to time as the Chairman may consider necessary, or as he may be requested to do by three members of the Committee, to act upon such matters affecting the administration of the Museum as cannot await consideration at the Regular Monthly Meetings of the Board of Trustees. It shall, before the beginning of each fiscal year, prepare and submit to the Board an itemized Budget, setting forth the probable receipts from all sources for the ensuing year, and make recommendations as to the expenditures which should be made for routine maintenance and fixed charges. Upon the adoption of the Budget by the Board, the expenditures as stated are authorized.

SECTION 8. The Auditing Committee shall have supervision over all accounting and bookkeeping, and full control of the financial records. It shall cause the same, once each year, or oftener, to be examined by an expert individual or firm, and shall transmit the report of such expert individual or firm to the Board at the next ensuing regular meeting after such examination shall have taken place.

SECTION 9. The Pension Committee shall determine by such means and processes as shall be established by the Board of Trustees to whom and in what amount the Pension Fund shall be distributed. These determinations or findings shall be subject to the approval of the Board of Trustees.

SECTION 10. The Chairman of each Committee shall report the acts and proceedings thereof at the next ensuing regular meeting of the Board.

SECTION 11. The President shall be ex-officio a member of all Committees and Chairman of the Executive Committee. Vacancies occurring in any Committee may be filled by ballot at any regular meeting of the Board.

ARTICLE IX.

NOMINATING COMMITTEE

SECTION 1. At the November meeting of the Board, each year a Nominating Committee of three shall be chosen by lot. Said Committee shall make nominations for membership of the Finance Committee, the Building Committee, the Auditing Committee, and the Pension Committee, and for three members of the Executive Committee, from among the Trustees, to be submitted at the ensuing December meeting and voted upon at the following Annual Meeting in January.



WATER HYACINTH (*Pistia stratiotes*).

REPRODUCTION OF AN ENTIRE PLANT.

STANLEY FIELD LABORATORIES, FIELD MUSEUM OF NATURAL HISTORY.

ARTICLE X.

SECTION 1. Whenever the word "Museum" is employed in the By-Laws of the Corporation, it shall be taken to mean the building in which the Museum as an Institution is located and operated, the material exhibited, the material in study collections, or in storage, furniture, fixtures, cases, tools, records, books, and all appurtenances of the Institution and the workings, researches, installations, expenditures, field work, laboratories, library, publications, lecture courses, and all scientific and maintenance activities.

SECTION 2. These By-Laws may be amended at any regular meeting of the Board of Trustees by a two-thirds vote of all the members present, provided the amendment shall have been proposed at a preceding regular meeting.

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 FIELD, STANLEY

GRAHAM, ERNEST R.
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 MARKHAM, CHARLES H.
 PAYNE, JOHN BARTON
 PROBST, EDWARD
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 SMITH, WILLARD A.

WHITE, HOWARD J.

DECEASED 1922

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WRIGLEY, JR., WILLIAM

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YATES, DAVID M.

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DECEASED 1923

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MAYER, LEVY
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SKINNER, MISS





THE LATE CHARLES F. MILLSPAUGH,
CURATOR OF THE DEPARTMENT OF BOTANY FROM NOVEMBER 1, 1893
TO SEPTEMBER 15, 1923, THE DATE OF HIS DEATH.

FIELD MUSEUM OF NATURAL HISTORY.

PUBLICATION 217.

REPORT SERIES.

VOL. VI, No. 3.

ANNUAL REPORT OF THE
DIRECTOR

TO THE

BOARD OF TRUSTEES

FOR THE YEAR 1923.



CHICAGO, U. S. A.

January, 1924.

A121

243/24



BEQUESTS

Bequests to Field Museum of Natural History may be made in securities, money, books or collections. For those desirous of making bequests to the Museum, the following form is suggested:

FORM OF BEQUEST

I do hereby give and bequeath to "FIELD MUSEUM OF NATURAL HISTORY" of the City of Chicago, State of Illinois, _____

Cash Contributions made within the taxable year to Field Museum of Natural History to an amount not in excess of 15% of the tax payer's net income are allowable as deductions in computing net income under the Revenue Law.

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DIRECTOR

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Assistant Curators

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JOHN E. GLYNN

CHIEF ENGINEER

W. H. CORNING

†Resigned, October 21, 1923.

*Deceased, September 13, 1923.

ANNUAL REPORT OF THE DIRECTOR

1923

To the Trustees of Field Museum of Natural History:

I have the honor to present a report of the operations of the Museum for the year ending December 31, 1923.

During the past year, the thirtieth anniversary of the foundation of the Institution, the activities of the Museum were effectively maintained in all directions. The accumulation of material of great value from new fields, obtained by expeditions dispatched to various parts of the world under the auspices of the Captain Marshall Field Fund, constituted the most important activity of the Museum for the year. The expeditions to China, to Brazil, to Chile, to British Honduras, the joint expedition of Oxford University and the Museum in Mesopotamia, the Riggs paleontological expedition to Argentina, the archaeological expedition in Colombia, and the collections made by ordinary Museum expeditions, have brought to the stores of the Institution the most valuable material from every point of view that any year has recorded. The expedition to the Malayan Archipelago, conducted with funds contributed by Mr. Arthur B. Jones, returned during the year with a large quantity of excellent material.

These expeditions have been conducted without serious interference to the work of labeling, rearranging and recasing previously acquired material and the installation of new specimens. The introduction of new material in the exhibition series in all departments, with the consequent extension of the geographic areas covered, has compelled a considerable rearrangement of material to conform to space requirements and the transfer of many duplicates to the study collections. On account of the scientific discrimination and care with which this work was performed, the study collections have become more complete without detracting from the interest of the exhibited collections, at least from a popular standpoint.

Increased storage facilities for duplicate and for exchange material have been provided in all the scientific departments, and the spaces for the accommodation of study collections are being enlarged and the system improved.

Although the general subject of accessions is discussed in a subsequent part of the report, special reference should be made here of the acquisition by gift of the well-known Borden Collection received from Mrs. George W. Robb of Borden, Indiana. This important collection consists of more than twenty thousand specimens of invertebrate paleozoic fossils, accompanied by the working library of the collector.

Two important archaeological collections, consisting of 3,800 specimens, deposited by Mr. Martin A. Ryerson with the University of Chicago several years ago, were presented by Mr. Ryerson to the Museum.

The progress made by the N. W. Harris Public School Extension during the past years and the interest that the public and the Chicago schools have manifested in this foundation, has encouraged the family of the founder of this philanthropy to increase the endowment from \$250,000.00 to \$375,000.00.

Late in the month of November, Captain Marshall Field volunteered to increase his annual contribution to the Museum of \$50,000.00 to \$100,000.00 until further notice. Captain Field made no restrictions as to the use of this annuity, except the general suggestion that it should be used for the extension of the activities of the Institution.

President Field has contributed during the year the sum of \$63,630.00 to the deficit existing in the Building Fund. The total contributions from Mr. Field towards this end amount to \$263,000.00. A contribution towards this deficit was also received from Messrs. Graham, Anderson, Probst & White, architects of the new building, in the amount of \$6,000.00.

President Field has also continued his endowment of the work performed in the Stanley Field Plant Reproduction Laboratories. His contribution for the year 1923 being \$12,000.00.

The late Milward Adams, a Life Member of the Museum who had been interested in the Institution for a period of over twenty-five years, bequeathed to the Institution the sum of \$5,000.00.

Trustee James Simpson completed his payments towards the construction of the theatre which bears his name, at a total cost of approximately \$150,000.00. In addition to the actual cost of the theatre, Mr. Simpson assumed the expense of a canopy erected outside the entrance doors to the theatre, seven feet wide extending eighty feet to the drive, with a wide T opening along the sidewalk.

The monumental work "The Sylva of North America" in fourteen volumes by Charles Sprague Sargent, and a considerable number of

volumes of the Bulletin of Essex Institute, all constituting an important acquisition to the general library, were presented by Mr. John J. Glessner.

President Field has also presented a life size bust in bronze of a large African gorilla, entitled "The Old Man of Mikenö" by Carl E. Akeley.

A representative collection of pewter, numbering 326 specimens, was presented by Mr. Edward E. Ayer. This material is installed in Room 23 on the second floor and has attracted much attention from visitors and students.

As will be read elsewhere, Mr. Edward E. Ayer has continued his contributions of books to the Edward E. Ayer Ornithological Library and also to the Ichthyological Library. A catalogue is now in preparation of the first mentioned library.

Mr. Alfred M. Collins, a Patron of the Museum, invited the Institution to participate in an expedition to the Belgian Congo for the purpose of collecting natural history specimens in a region not previously subjected to careful investigation, with the result that Mr. Edmund Heller, Assistant Curator of Mammals, was assigned to accompany Mr. Collins to Africa. The party sailed from New York late in November, and expected to reach their destination the first of January. The plans of the expedition will keep it in that country for approximately six months.

The reports from Professor Stephen Langdon, in charge of the joint expedition in Mesopotamia, at least suggest the acquisition by the Museum of important archaeological examples.

In accordance with the arrangement made with the Geographic Society of Chicago some time ago, whereby the Museum agreed to allocate office area for the headquarters of the Society, it was determined to assign Hall 33 for this purpose. The premises thus assigned have been attractively furnished, occupancy commencing early in the month of September.

The physical additions to the building during the year included the construction of a Poisoning and Storage Room at the south end of the fourth floor, which provides excellent storage facilities for the Department of Anthropology. The restaurant on the ground floor was converted during the year into a cafeteria, where self-serving facilities are now available. The headquarters of the Guard force have been transferred from the south side to the northwest corner of the building, where more comfortable accommodation is provided.

As a means of controlling daylight in the exhibition areas, windows in Halls 22, 29 and 38 have been furnished with one hundred and eighty pairs of interlined Mohair curtains. These curtains are hung on brass poles and so arranged that the upper third or lower two-thirds can be drawn independently of each other. They are of a color to harmonize with the wall decoration.

The filling in of the terrace and the unfinished marble steps at the east end of the building were completed, as were the approaches and sidewalks of the terrace. The shipping room and boiler room roofs were waterproofed and overlaid with cement. These approaches and roofs required the laying of 5,721 square yards of white cement to match the entrances. The sidewalk along the outer balustrade of the terrace, connecting with the cement work to make a continuous walk around the building, required the laying of 2,400 feet of crushed limestone fifteen feet wide. Two ornamental grill openings have been fitted in the buttresses of the north entrance steps for fresh air intakes. The terrace steps have been repointed with cement and the entrance steps and buttresses have been caulked and pointed. The window sills have been carefully examined and more than one-third of them caulked and repointed.

A fuming hood with exhaust for celluloid work and three fresh air inlets have been installed in the taxidermy shop. The bird taxidermist shop on the third floor and rooms 88 and 90 have been equipped with water, gas, air, work benches, storage cases for specimens and storage cases for working material. Window benches have been built in rooms 81 and 88. On the third floor eleven rooms have been painted.

In order to provide suitable space for the departmental library in Botany, Room 2, formerly a skylight, has been floored over and the partitions separating rooms 1 and 2 removed and the three rooms thrown into one large room. Somewhat similar arrangements were made for the Departmental library in Geology, with the exception that the partitions were not removed. In the latter library 1,388 lineal feet of shelving have been placed.

The facilities in the Section of Printing have been increased by the addition of a 14 x 22 Universal Printing Press, equipped with a variable speed motor. This press is used chiefly for process color printing. It is adaptable for embossing work and for large labels or any printing too large for the two platen presses.

Progress has been made during the year in the classification of the 20,000 lantern slides. These slides were originally divided between the four departments under separate index systems, but have now been

brought together under one central system. Five lantern slides file cabinets were purchased, with a total capacity of approximately 50,000 slides. These cabinets were specially built for the storage of lantern slides, with grooved compartments along the interior of the drawers to secure a perfect division of the slides.

A gratifying and increasing appreciation of the lecture courses presented by the Museum is to be recorded, especially by children under sixteen years of age, for whom two courses were specially arranged. The programs for children consist chiefly of moving pictures and are given on Saturday mornings in March and April, October and November. At first it was believed that one showing of the picture would be sufficient, but the children attracted to these entertainments on one Saturday morning numbered over seven thousand, with the consequence that the lecture had to be repeated five times. The attendance subsequently dropped off slightly, due to the disappointment of many who could not even approach the doors of the theatre.

The campaign of publicity regarding the Museum and its activities resulted in a marked increase in attendance within a few weeks of its inauguration. The Museum is indebted to the cooperation of the transportation companies in placing the placards relating to the Museum in their cars and station platforms. The motor clubs also assisted in distributing folders containing information as to the correct motor roads leading to the Institution.

The By-Laws, published elsewhere in this report, explain the different characters of memberships and discloses the conditions under which they may be secured. Under the direction of the Secretary of the Corporation nominations for memberships were and are being made in large numbers and thus far 142 Associate Members, 88 Sustaining Members, and 253 Annual Members have been elected.

Besides securing to the Museum an effective constituency, these memberships provide a considerable annual revenue and it is believed that with proper efforts the number may be largely augmented from year to year.

In recognition of the eminent service he has rendered to science, Mr. Ernest R. Graham was elected an Honorary Member of the Museum.

In recognition of the eminent service they have rendered to the Museum, Mr. Peirce Anderson, Mr. Edward Probst, Mr. Howard J. White, Dr. George F. Kunz, and Mr. William V. Kelley were elected Patrons of the Institution.

The following were elected Life Members: Mr. Sewell L. Avery, John F. Jelke, Jr., Miss Shirley Farr, Mrs. Julia L. Whitney, Mr. Harold

H. Swift, Mr. William H. Finley, Miss Alice Robson, Mr. F. Edson White, Mr. W. R. Linn, Mr. Augustus A. Carpenter, Mr. Charles K. Knickerbocker, Mr. Chas. A. Stevens, Mr. George S. Payson, Mr. Albert Pick, Mr. Benjamin Carpenter, Mr. Charles H. Markham, Mr. C. M. Kittle, and Mr. Kieth Spalding.

An amendment to the By-Laws made during the early part of the year, concerned the method of disbursing the funds of the Institution; briefly, the voucher system heretofore in operation was partially abandoned, a combination voucher and check being substituted. This change has materially reduced the clerical work in this connection.

The Board of Trustees, after careful consideration, decided to abandon the suggestion to install in the new building the transportation collection at one time exhibited in the old building in Jackson Park.

The founder of the Stanley Field Museum Employees Pension Fund, with the approval of the Pension Committee, authorized a handsome increase in the capital value of the life policies of those individuals who have been in the continuous service of the Museum for a period of twenty-five years or more. This action when put in operation affected twenty-one individuals.

The Museum sustained a very serious loss during the year in the death of Dr. Charles F. Millsbaugh, Curator of the Department of Botany since the inception of the Institution. The loss of Dr. Millsbaugh to the Museum is expressed in the following resolutions adopted by the Board of Trustees:

The announcement of the death of Doctor Charles Frederick Millsbaugh, in Chicago on September 15, 1923, is received by the Board of Trustees of Field Museum of Natural History with feelings of deep regret.

Beginning his career as a physician, Doctor Millsbaugh early undertook the study of medicinal plants. While thus engaged, botany gradually became his dominant interest and, in the end, his life work and profession, for which his practice of medicine was abandoned. He became in time one of the best known botanists of the day and his standing was unique, being equally notable in two distinct fields of his science, taxonomy and plant economics.

He enjoyed the distinction of having been the first appointee on the museum staff and as such was associated with this institution from its very inception. For the first time in the history of Museums Botanical Science was given full recognition and an adequate amount of space for its display. The opportunity thus granted was utilized by Doctor Millsbaugh to the fullest extent.

The son of an artist, he wrought a knowledge of the principles and practice of art as well as of science into his work, and was thus able to impart rare attractiveness as well as scientific accuracy to his museum displays. It is conceded by those familiar with his museum installations that he initiated a new era for botanical exhibits.

No less remarkable than his genius for museum display was his ability as a curator from the administrative and scientific standpoint.

In a relatively short period of time he built up the Herbarium of Field Museum until it ranks as one of the largest in the world, and through a system of cataloguing which he devised and carried into effect, its contents are so well organized that it is available for reference to a degree perhaps unequalled.

In his personal relations as a member of the Museum Staff, Doctor Millspaugh was respected and admired by all. Especially noteworthy was his unfailing readiness to place at the service of his colleagues any or all of the treasures of wisdom with which his many years of wide experience had provided him.

He traveled extensively both before and during his connection with the museum, visiting many foreign countries in the interests of his department, and in the course of his travels worked for a time in most of the botanical gardens of the world.

Doctor Millspaugh was the author of a number of books, notably a *West Virginia Flora*, and the co-author of others, such as the recent *Bahama Flora*, in conjunction with his friend Doctor N. L. Britton. The last of his works, the *Flora of Santa Catalina*, gained universal approval as a model of its kind. His treatises on the plants of Yucatan, his botanical explorations in the Bahamas, and his work on the Spurges in particular, were accorded wide recognition. In botanical literature his name will always endure.

His death is felt as a distinct loss by the Board of Trustees, and he is mourned by the staff of the museum, as well as by many who knew him only by name or as National President of the Wild Flower Preservation Society.

The Board of Trustees desires to have this expression of their sorrow and appreciation of Doctor Millspaugh's work and career spread on the records of the institution and a duly attested copy sent to the members of his family.

GENERAL LECTURES.—On October 6th, the Museum resumed its series of free lecture courses discontinued since the Autumn of 1913. The lectures were held in the James Simpson Theatre on Saturday afternoons, at three o'clock. Because of the varied nature of these lectures they were well attended. Since adults showed much interest in the program of moving pictures arranged for children, three programs were added to the regular series. These were the Martin Johnson film, "Trailing African Wild Animals;" "A Trip Through Egypt;" and the film "Nanook of the North." The total attendance for the course was 8,293 persons.

The following is the program of the Fortieth Free Lecture Course, delivered during the months of October and November, 1923:

October 6—"Unique Siam."

Professor James H. Gore, Founder and Life Trustee
of National Geographic Society, Washington,
D. C.

October 13—"Australia's Wild Northwest."

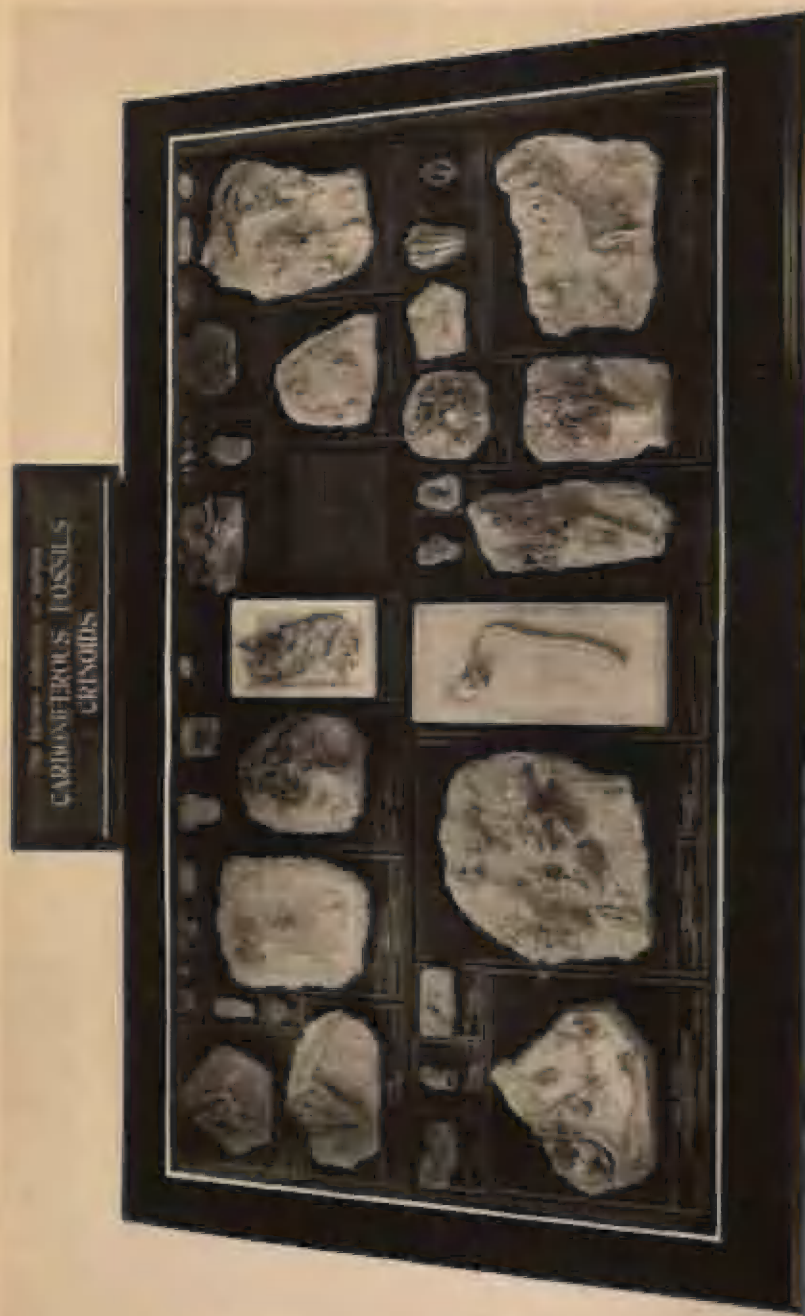
Mr. M. P. Greenwood Adams, New York City.

- October 20—"The Music of the Red Man."
Dr. Henry Purport Eames, Chicago, Illinois.
- October 27—"Fishes and Fishing in South America."
Dean Carl H. Eigenmann, Indiana University,
Bloomington, Indiana.
- November 3—"The Natives of the Marquesas Islands."
Dr. Ralph H. Linton, Assistant Curator of North
American Ethnology, Field Museum of Natural
History.
- November 10—"Animal Life in the Jungles of South America."
Mr. Edmund Heller, Assistant Curator of Mam-
malogy, Field Museum of Natural History.
- November 17—"The National Park Service—What It Is Trying To
Do for the American People."
Hon. Stephen T. Mather, Director of the National
Parks, Department of the Interior, Washington,
D. C.
- November 24—"On Beaten Paths in Europe; A Travel Talk."
Professor J. Paul Goode, University of Chicago,
Chicago, Illinois.

ENTERTAINMENTS FOR CHILDREN.—Regular courses of lectures to school children have been given during the year in the James Simpson Theatre of the Museum. The main features of the entertainments were the moving pictures which added much to the interest of the children. There were two courses; the first series of ten entertainments being held in the spring and the second series of eight in the fall. Three of these fall programs were so enthusiastically received that they were repeated during the month of December. Many of the lectures were so popular, that the applications for seats were greatly in excess of the capacity of the Auditorium and it was necessary to extend the original lecture of one hour to a continuous program lasting from 9:00 o'clock in the morning until 1:00 o'clock in the afternoon. The total attendance for the two courses was 22,021 children.

The programs were as follows:

- March 24—Introduction.
Moving Pictures: "The Four Seasons" (Animal Life).
Museum Tour: Department of Zoology.
- March 31—"Chipmunks and Their Relatives."
Moving Pictures: "Chipmunks and Other Animals."
"Br'er Rabbit and His Pals."
Museum Tour: Halls 15, 16 and 17.



FOSSIL CRINOIDS FROM THE BORDEN COLLECTION OF INDIANA.

GIFT OF MRS. GEORGE W. BORDEN.

One sixth actual size.

- April 7—"Birds of Lake Michigan."
*Moving Pictures: "Water Birds."
Museum Tour: Halls 20 and 21.
- April 14—"The Folk Lore of Precious Gems."
Moving Pictures: "Magic Gems."
"Neptune's Neighbors."
Museum Tour: H. N. Higginbotham Hall.
- April 21—"How Birds Migrate."
*Moving Pictures: "Familiar Birds."
Museum Tour: Halls 20 and 21.
- April 28—"Primitive Fire Makers."
*Moving Pictures: "Fire Making Without Matches."
"Ants."
"Bees."
Museum Tour: Department of Anthropology.
- May 3—"Children in Japan."
Moving Pictures: "Nippon. The Boys' Festival."
"Going to School in Japan."
Museum Tour: F. W. Gunsaulus Hall.
- May 12—"Home Life of Common Birds."
*Moving Pictures: "Common Birds."
Museum Tour: Halls 20 and 21.
- May 19—"The Habits of the Moose and the White-tailed Deer."
*Moving Pictures: "Wild Moose and Deer."
"Man's Four-footed Helpers."
Museum Tour: G. M. Pullman Hall and Hall 16.
- May 26—"What Sharp Eyes Can See."
*Moving Pictures: "Wayside Natural History."
Museum Tour: General.

* N. B.—Grateful acknowledgment is made to Doctor Thomas W. Roberts, Director of the Zoological Museum of the University of Minnesota, for the loan of moving pictures marked with an asterisk.

- October 6—Moving Pictures: "Trailing African Wild Animals." (The Martin Johnson Film).
Museum Tour: African Game Animals.
- October 13—Moving Pictures:
* "Snowy Heron and Its Extermination."
* "Non-game Bird-life in Louisiana."
* "Game Bird-life."
* "Wild Geese."
Museum Tour: Birds.
- October 20—Colored Slides and Moving Pictures:
† "The Monarch Butterfly."
† "The Samia Cecropia Moth."
† "The Greenbottle Fly."
Museum Tour: Insects.
- October 27—Colored Slides and Moving Pictures:
† "Pond and Stream."
† "Toads."
Museum Tour: Fishes and Reptiles.
- November 3—Colored Slides and Moving Pictures:
† "Field and Wayside."
† "Bees."
† "Wasps."
Museum Tour: Insects.
- November 10—Colored Slides and Moving Pictures:
† "Mosquitoes."
† "The Black-and-yellow Spider."
† "Baby Song-birds at Meal-time."
Museum Tour: Insects and Birds.

November 17—Moving Pictures:

"A Trip to Egypt."

"Egypt—The Road to the Pyramids."

"Calling on the Sphinx."

Museum Tour: Egyptian Archaeology.

November 24—Moving Pictures: "Nanook of the North."

Museum Tour: Eskimo Collection.

N. B.—Grateful acknowledgment is made to Mr. E. A. McIlhenny of Avery Island, Louisiana, for the gift of moving pictures marked with an (*) and to the Society for Visual Education, Chicago, for the loan of moving pictures marked with a (†).

PUBLICATIONS

The following books have been published during the year:

- Pub. 212—Botanical series, Vol. V, No. 1. The Flora of Santa Catalina Island. By Charles P. Millsbaugh and L. W. Nuttall, January, 1923. 413 pages, 1 color plate, 25 halftones, 1 map. Edition 1,031.
- Pub. 213—Report Series, Vol. VI, No. 2. Annual Report of the Director for the year 1923. 81 pages, 13 halftones, Edition 2,028.
- Pub. 214—Zoological Series Vol. X, No. 16. Contents and Index to Volume X (Nos. 1-15) 22 pages. December, 1923. Edition 1,000.
- Pub. 215—Zoological Series, Vol. XV. Marine Fishes of Panama. Part 1. By S. E. Meek and S. F. Hildebrand. December, 1923. 342 pages. 24 halftones. Edition 1,500.

A list of handbooks and leaflets published is given below:—

- Manual—53 pages, edition 4,953.
- General Guide—24 pages, edition 15,055.
- Guide to Oriental Theatricals, Part 1. By B. Laufer. Edition, 4,997. 11 halftones. 59 pages.
- Leaflets—Anthropology, No. 7. Purification of the Sacred Bundles. By Ralph Linton. One photogravure. 11 pages. Edition 3,103.
- Anthropology, No. 8. Annual Ceremony of the Pawnee Medicine Men. By Ralph Linton. 2 photogravures. 20 pages. Edition 3,064.
- Anthropology, No. 9. The Use of Sago in New Guinea. By Albert B. Lewis. 4 photogravures. 3 figures. 9 pages. Edition 3,054.

Anthropology, No. 10. Use of Human Skulls and Bones in Tibet. By B. Laufer. One halftone. 16 pages. Edition 2,970.

Anthropology, No. 11. The Japanese New Year's Festival, Games and Pastimes. By Helen C. Gunsaulus. 8 halftones. 18 pages.

Geology, No. 3. Amber. By Oliver C. Farrington. 3 colored photogravures. 1 photogravure (monotone) 7 pages. Edition 3,051.

Geology, No. 4. Meteorites. By Oliver C. Farrington. 4 photogravures. 11 pages. Edition 3,044.

Zoology, No. 4. The Periodical Cicada. By William J. Gerhard. 4 photogravures. 14 pages. Edition 3,128.

Zoology, No. 5. The Alligator Gar. By Alfred C. Weed. 3 photogravures. 16 pages.

LIBRARY

The location of the Library, on the third floor, to which it was transferred early last year has proved of great benefit to the staff of the Museum. The resources of the library have been constantly taxed, especially by the returning members of the expeditionary forces who need authoritative works to identify, classify and label the material collected. The accessions of the year were 2,375 books and pamphlets and 81 maps, bringing the total number of books and pamphlets in the library to 82,033.

As in former years the library is again indebted to the generosity of Mr. Edward E. Ayer for valuable additions to the Ornithological Library bearing his name. This donation includes one hundred and fifty one works in seven hundred and twenty volumes, exceeding in number any of his previous gifts. Included in this collection were books long out of print or unusual in character. A special bookplate designed by the Museum's artist has been made to mark the books presented by Mr. Ayer. Mr. John J. Glessner presented the monumental work by Charles Sprague Sargent, *The Silva of North America*, in fourteen volumes, illustrated by over seven hundred plates. Noteworthy accessions were also received from M. Henri Gadeau de Kerville, Paris—a Zoological Voyage through Syria; Mr. Ramirez Goyena, Nicaragua, the *Flora of Nicaragua*; Mr. E. A. Strohlneck, Shanghai, *Chinese Pictorial Art*; Mr. William J. Chalmers, works on China; Mr. J. A. Hammerton, London, *Peoples of all Nations* and Hon. John Barton Payne, Gamio, *La Poblacion del Valle de Teotihuacan*, three volumes.

The fund available for the purchase of books was expended on works necessary to meet the requirements of the staff. Over two hundred and eighty-five books were purchased and orders for one hundred and twenty-nine volumes are still outstanding. Five hundred and seventy-nine volumes of books were bound and eleven thousand, four hundred and seventy-nine cards were alphabetically filed, together with the monthly installments of author cards from the John Crerar Library.

Among a number of important sets of periodicals purchased are the following:

Annals of the Association of American Geographers, eleven volumes.

Avicultural Magazine, fifteen volumes.

Buffon, Histoire naturelle, one hundred and twenty-seven volumes. 1798-1868.

Chinese repository, twenty volumes, 1832-1857.

Dictionnaire des Sciences Naturelles, thirty-six volumes.

Engler and Prude's Vegetation der Erde, fourteen volumes.

Gypsy Lore Society Journal, nine volumes.

Journal of the Bombay Natural History Society, twenty-three volumes.

K. K. Zoologisch-Botanische Gesellschaft, Verhandlungen, fifty-three volumes.

Ornithologisches Jahrbuch, twenty-nine volumes.

The principal asset in the growth of the library is the system of exchange, by means of which the publications of other scientific institutions are received in exchange for those issued by the museum. Exchanges were received this year from six hundred and seventy individuals and contemporary institutions. Five new exchanges were effected with the following societies: *Société des Sciences Naturelles de l'Afrique du Nord*, *Société Botanique de Pologne*, Warsaw, *Société Scientifique de Poznan*, *Société des Sciences Naturelles du Maroc* and *Société de Géographie d'Alger*.

DEPARTMENTAL CATALOGUING, INVENTORYING AND LABELING

ANTHROPOLOGY.—The work of cataloguing in the Department of Anthropology has been continued as usual during the current year, the number of catalogue cards prepared totaling 2,429. These cards are distributed geographically as follows: South American and Mexican archeology 1553; North American ethnology 88; Australia and Africa 31;



PREHISTORIC GOLD ORNAMENTS EXCAVATED FROM GRAVES.
SANTA MARTA, COLOMBIA.

CAPT. MARSHALL FIELD EXPEDITION TO COLOMBIA, 1923.
Three fifths actual size. Width of central figure $4\frac{1}{2}$ inches.

China, Korea and Japan 552; Chinese pewter 20; European pewter 185. Of these cards 376 have been entered in the inventory books of the department, which number 39. The number of annual accessions amounts to 50, of which 26 have been catalogued. Two accessions of previous years were also tabulated. The total number of catalogue cards entered from the opening of the first volume is 157,038. Several thousand labels were prepared and installed during the year, the number of labels supplied by the printer totaling 5,036. These labels are distributed as follows: Plains Indians 2,261; Plateau Indians and Salish tribes 803; Mexico, Paraguay and Brazil 410; Ayer Pewter collection 570; Melanesia 96; Stanley Field Hall 48; Gem Room 3; Egypt 76; sculpture of India 120; Japan 638; miscellaneous 11. The printer further supplied the Department with 6,175 catalogue cards and 500 copies of a sketch map of the United States, to be used for exhibition purposes in the cases of Halls 4 and 5. Two hundred and twenty label cards were prepared and added to the label-file. The labels in this file serve as a cross check to the labels in the exhibition cases, so that any label desired may be found without delay. Three hundred and fifty-four photographs were added to the departmental albums, and a new album was begun.

BOTANY.—Over 16,800 new entries were made during the year in the Department Catalogue, bringing the total number of catalogued specimens in the Department up to 529,991. Additions were made to the various Department card files as follows:

| | No. of Cards 1923 | Total |
|--|----------------------|---------|
| Index to Botanical Species | 4,761 | 170,849 |
| Index to Common Names | 607 | 24,108 |
| Index to Collectors | 164 | 10,584 |
| Index to Geographical Localities | 47 | 2,907 |
| Index to Euphorbiaceae | 852 | |

A card catalogue index was begun of the 'economic' material in the Department, i. e., all of the exhibition and reference material other than the herbarium specimens. A total of 8,400 cards were written and indexed.

GEOLOGY.—All accessions received in the Department of Geology have been carefully catalogued as received with the exception of the collections obtained by the Alberta expedition and part of those acquired by the Curator in Brazil. The cataloguing of these is not yet completed. The Borden collection is being catalogued as fast as it can be organized, but it will be several years before the work on this material is completed. A total of 6,245 new entries has been made during the year. Of these,

5,246 represent additions to the Borden collection; 540 to the mineral and 147 to the economic collections. A total of 577 new labels were written during the year. A new process of printing, developed in the section of printing, has made possible the installation of mahogany guide labels over the cases in the halls of mineralogy, paleontology and dynamic and geographic geology. These labels are printed in gold ink on a veneer of mahogany board and thus harmonize completely with the framing of the cases. This system of case labeling, which is a distinct improvement over the old style labels, was originated several years ago and is now nearing completion. A total of 231 prints have been added to the Department photograph albums, which now contain 4,052 labeled prints.

Special labor was involved in the preparation of a series of large, oval, descriptive labels which have been placed at the ends of ten pyramidal cases in paleontology. They were printed with gold ink on mahogany veneer board. As it was found that a glass cover would interfere with their legibility, the mahogany board upon which they were printed was specially prepared to ensure durability of the printing. The effect of the labels as prepared and mounted in this manner is very pleasing and it is believed that they will be found to be durable.

For the systematic mineral collection a series of large labels giving a description of important mineral groups, such as the micas, feldspars and garnets has been prepared and installed.

ZOOLOGY.—The cataloguing of the accessions in the Department of Zoology has been continued. The total number of entries made was 3,451, distributed as follows: Mammals, 132; Birds, 140; Fishes, 448; Insects, 425; Skeletons, 43; Reptiles and Amphibians, 2,262. The entries made in the last division represent the accumulated uncatalogued material, which has now been reduced to a minimum. The index of salamanders has been maintained and shows an increase of 22 entries and an addition of five species new to the Museum's collections. In the Division of Fishes 500 additional entries have been made in old record books under numbers "assigned" but not previously used. In the improved index of fish specimens under the new catalogue system, 103 new sheets have been made and new entries on these and other sheets total 337. All specimens have been thoroughly labeled. In the Division of Insects, the cataloguing has been confined mostly to the series of North American butterflies which were selected for future exhibition. New labels for 994 shells have been provided to replace the old style of labeling. In the Division of Osteology 12 new labels were



GREAT GRAY OWL.
TAXIDERM BY ASHLEY HINE.
One third natural size.

prepared, framed and placed on metal supports in front of the large skeletons which are installed on open stands. A total of 2,016 lantern slides has been classified and labeled under the following headings: Zoology 782, maps and diagrams 108, physiography and scenery 1,136.

The following table shows the work performed on catalogues and inventories in the various Departments.

| | Number of Record Books | Total No. of entries to Dec. 31, 1923 | Entries during 1923 | Total No. of cards written |
|---------------------------------|---------------------------|--|---------------------------|----------------------------------|
| Department of Anthropology..... | 19 | 159,991 | 2,429 | 159,991 |
| Department of Botany..... | 63 | 329,248 | 16,822 | 8,400 |
| Department of Geology..... | 22 | 153,916 | 6,245 | 6,822 |
| Department of Zoology..... | 40 | 108,671 | 3,431 | 34,909 |
| The Library..... | 14 | 142,393 | 11,499 | 317,917 |

ACCESSIONS

ANTHROPOLOGY.—The new accessions received during the past year by the Department of Anthropology have been extraordinarily large, due to the successful field expeditions. These accessions were received from almost all parts of the world and exceed in number and value the accessions obtained during the past twelve years. The total number of accessions registered amounts to 59; of these, 45 are by gift, 4 by exchange, 6 by purchase, and 4 as the result of Museum expeditions.

Several more shipments were received from the Captain Marshall Field Expedition to Colombia, containing large numbers of fine small objects, such as gold, beads, shell, stone and pottery, as well as ethnological objects from the Goajiro and Arhuaco Indians, consisting of knitted bags and hammocks, bows and arrows, pots, gourds, and many others illustrative of their culture and mode of life. The collections obtained by the Arthur B. Jones Expedition to Malaysia are particularly noted for the textiles and metal work, comprehensively representing the life of the Sakai, Semang, Yakun and Malay of the Federated Malay States, the Tobak Batak and Menangkabau of Sumatra, as well as the natives of Nias, Java and Borneo. The collections secured by the Captain Marshall Field Expedition to China conducted by the curator have been characterized under the heading "Expeditions."

The most valuable accessions to the North American Indian collections consist of a complete Menominee Indian woman's costume, purchased through the assistance of Mr. Alanson Skinner of the Public Museum of Milwaukee. Two Fox medicine bundles, three Fox medicine otters, three Iroquois pipes, and two Central Algonquian robes with silk appliqué were received through exchange with the Public Museum of Milwaukee. The examples of Indian appliqué work are especially

valuable, as this form of decoration was highly developed among the Indians living in the neighborhood of Chicago during the early nineteenth century and was not previously represented in the Museum collections. A small, but excellent collection of objects from the Alaskan Eskimo was presented by Mr. W. H. Roberts of Chicago. Mrs. C. M. Andersen of Chicago presented an Eskimo woman's suit consisting of an eider-down lined jacket, sealskin trousers and inner and outer sealskin boots, brought from Good Hope, Greenland. Mr. Edward E. Ayer presented a woman's dance skirt of buckskin decorated with shells and pendant beads of glass, shell, and abalone, from one of the tribes of northwestern California. A head-band of stuffed buckskin and a closely woven head-dress worn in the White Deerskin Dance are the gifts of Mr. Homer E. Sargent and were accompanied by a unique Navaho blanket in red, black, yellow and green colors made from native dyes. The history of the blanket, as far as obtainable, is that it was secured in the Navaho country about 1850 and remained in the possession of the same family until quite recently. The Museum, further, received from Mr. Sargent the fifth installment of his collection of baskets consisting of 27 specimens from Alaska, California, and Abyssinia. These, with his previous gifts of the same character, make a total of 665 baskets he has presented to the Museum. Mr. Watson F. Blair and Mr. Chauncey Keep, trustees, presented two very large chipped obsidian blades from the Yurok tribe of Humboldt County, California, similar to those which were carried in the hands of the two leaders of the White Deerskin Dance, performed only in that region. A Salish blanket purchased by the Museum presents an unusual texture and technique, being decorated with a group of herringbone patterns.

Seven accessions relate to Latin America, two from Mexico being considered the most important. The large Mexican collection formerly deposited in the University of Chicago was presented to the Museum by Mr. Martin A. Ryerson. This collection consists of about 3,000 pieces, among them being some exceptionally fine specimens of pottery, stone carving, and work in obsidian, shell and copper. The Aztec, Toltec, Zapotec, Huastec and Tarascan cultures are well represented, and the collection is eminently desirable to round out and improve the present Mexican exhibit. It also contains 400 objects relating to the archeology of the Southwest and 70 objects from Peru. Mr. Franklin Hollister presented an excellent small Mexican statue of lava with inset bone teeth of typical, but unusually fine technique. Two small collections were secured by the Museum's zoological expeditions to South America. One of these, a collection excavated and presented to the

Museum by Mr. F. C. McNutt, is especially noteworthy for carved wooden objects and basketry. The arid climate of the Atacama desert, in the north central portion of Chile, has served to preserve these antiquities, which have been recovered in excellent condition. Unusual pieces of bronze, stone, textiles and pottery are also contained in the collection, which demonstrates affinities with both Peruvian and Calchaquian cultures. Among twelve copper pieces is included an extraordinary axe of Diaguite type, skillfully hafted. There are some remarkable wooden bells of oval shape with two holes for suspension, similar to the copper bells of Diaguite origin.

The Egyptian collections were increased by the wrappings of a mummy and 18 Ushebti figures, presented by Mr. Edward E. Ayer. These, with the series donated on previous occasions, make a total of 95 Ushebti figures. A lion-mane head-dress with two strips of white monkey-skin attached, from the Masai in British East Africa, was presented by Mr. A. Healy of Chicago. As this tribe is no longer permitted to engage in warfare, such head-gears have become quite scarce. Bows and arrows from the Congo region were given by Mr. W. J. Chalmers. Arm rings of ivory and brass wire, daggers, and foot-wear from Upper Nigeria were purchased by the Museum. Three good examples of boomerangs from tribes of Central Australia, two being painted with native red ochre, and one of a rather unusual type, were presented by Mr. F. R. Babcock. While engaged on his expedition to China, the curator received many gifts to the museum, aggregating 206 objects. Fine jade carvings of the Han period, jade boulders and ancient iron implements presented by Mr. P. J. Bahr of Shanghai, and an imperial jade emblem of the Sung period presented with four bits of Sung, Yuan, and Ming pottery by Mr. T. R. Abbott of Peking, are deserving of particular mention for their artistic value.

At the beginning of the year, Mr. Edward E. Ayer presented an extensive collection of pewter objects comprising plates, tankards, jugs, mugs, tureens, guild-cups, teapots, lamps and candlesticks, which originated in China, England, the United States, Germany and Austria. This collection was immediately placed on exhibition in Hall 23 in 9 cases. Since then, Mr. Ayer has completed his collection of ancient pewter by means of numerous additions. In the course of the year 139 pewter objects of European, Chinese and Japanese origin were received from Mr. Ayer in order to strengthen the collection now on exhibition. With these novel additions, the pewter collection is made thoroughly comprehensive, embracing all countries and periods, and containing all articles ever made in this alloy.

Dr. Ludwig Hektoen presented a very fine old blade from a Japanese fighting sword. This sword is presumably of sixteenth century workmanship, and is encased in a scabbard of unstained wood which is protected by a brocade cover. A series of ten Japanese paintings illustrating the transience of human life are the gift of Mr. Frederick Gookin of Chicago. Three miniature Japanese masks of carved, painted wood, representing a peasant and two young noblemen, were received from Mr. Norman Beck of Chicago, and Mr. Charles Alling of Chicago added an interesting surimono by Kunisada to the collection of Japanese prints.

BOTANY.—The most important accessions to the Department of Botany were received from the Captain Marshall Field Expeditions: 11,000 specimens, or 4,250 numbers were secured, of which 3,500 are flowering and 750 are non-flowering plants. Other collections of importance received during the year were the André Bolivian Collection of 1,000 plants secured from the Kew Gardens; the Robert H. and Richard Schomburgk British Guiana collection of 315 specimens; the H. A. Gleason collection of 1,200 Guiana plants and the LaVarre-Lang collections of 200 numbers; a collection made by A. C. Persaud of 1,300 specimens or 445 numbers also from British Guiana; 496 Brazilian plants collected by Blanchet and Claussen; a miscellaneous collection of 502 plants from the United States National Herbarium; another of 555 specimens mostly from Pennsylvania, collected by R. R. Driesbach; a collection of 218 Wisconsin plants deposited by John R. Heddle.

GEOLOGY.—Mrs. George W. Robb of Borden, Indiana, presented the Department of Geology with the most important addition to the original geological collections ever received by gift. This valuable collection forms an unusually complete series, estimated to contain about 30,000 specimens of Devonian, Mississippian and Pennsylvanian fossils, from the well-known collecting grounds of southern Indiana and Kentucky. It contains also numerous specimens from other regions and periods.

This collection is the result of many years' work by the prominent geologist, Prof. William W. Borden. To the result of his own labors Professor Borden added at a cost of thousands of dollars the best specimens he could secure from other collectors. He purchased the entire Harrod collection and others of lesser note and secured the most valuable material from such well known collections as the Greene. Although a substantial Museum building had been erected in Borden to house the collection, Mrs. Robb felt that its importance justified placing it in a larger institution where its intrinsic value could be appreciated by greater numbers.



CEREMONIAL OBSIDIAN BLADES OF YUROK, CALIFORNIA.

PRESENTED BY CHAUNCEY KEEF AND WATSON F. BLAIR.

Length $20\frac{1}{4}$ and $18\frac{1}{4}$ inches, respectively.

The collection is especially noteworthy for the beauty and perfection of its crinoids and for the extreme care with which the specimens have been assembled. This acquisition has made it necessary to prepare for an extensive reorganization of the exhibits of invertebrate paleontology.

Dr. William Bebb presented twelve specimens of fossil bird skulls from the La Brea asphalt beds. The Stanford University through the courtesy of Dr. David Starr Jordan, presented a slab containing fossils of the herring-like fish, *Xyne*. Twenty-three fossil shells from the Chilean Andes have been received from the Captain Marshall Field Chilean Expedition. Teeth from two of the great fossil sharks, collected in equatorial Africa, were presented by Mr. Anthony J. Wische. A large collection of fossil shells from the San Pedro beds, California, was contributed by Mr. E. E. Halvorsen of Santa Barbara. Mrs. W. L. Crawford added to her former gifts an excellent plastron of a fossil turtle from Texas. Four fossil fish were gifts from Mrs. Walter C. Ellis. The head of a trilobite found by Mr. Quincy L. Dowd in Lombard, Illinois, and presented to the Museum, represents a larger species than is commonly found in this local area.

The meteorite collection has been enlarged by the gift of a specimen of the Waraldi meteorite, presented by Mr. George W. Card of Australia. Professor Liversidge of Surrey, England, presented casts of the Binger meteorite and Mr. Ralph Buckstaff gave a specimen of the Pitts meteorite.

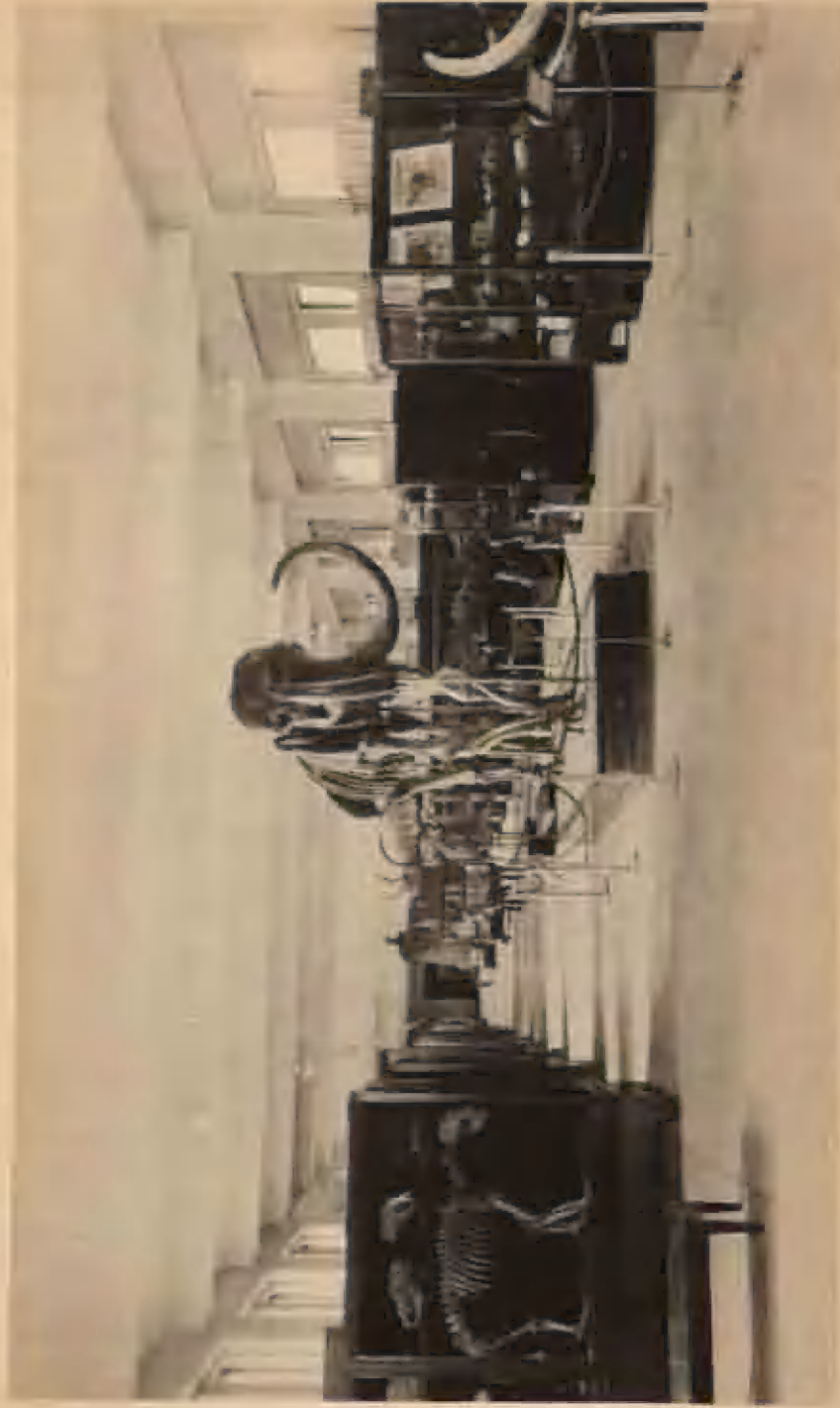
Mr. William J. Chalmers added 49 specimens of gems and choice crystals to the crystal collection bearing his name and also presented a number of Californian nuggets which are now in Higinbotham Hall. Mr. Wayne E. Douglas secured in southern Illinois some unusually attractive fluorites and presented them to the Museum. A group of minerals from well known collecting grounds in New England, was added to the collections by Mr. W. J. Elwell. In addition to his former gifts, Mr. F. J. Lean presented a large specimen of datolite and a number of native coppers of unusual forms. Mrs. Scott Jordan, Miss Fannye M. Neumann, Mrs. M. R. Rood and Mrs. D. N. Eisendrath have each presented collections which contain a variety of minerals. The Standard Oil Company (Indiana) has enlarged the petroleum exhibit by the addition of 86 candles. Mr. W. C. Flower filled a gap in the collection of gold and silver ores by the presentation of nine specimens from Oregon and Idaho, and a collection of ores and minerals from South Dakota was received from the Department of Immigration of that State. Through the good offices of Mr. William J. Chalmers, the Asbestos Corporation of Canada, Ltd., presented six fine specimens of Canadian asbestos.

Specimens of minerals, ores and rocks, numbering 323, collected by the Captain Marshall Field Brazilian expedition of last year, reached the Museum during the year. A single topaz crystal of 90 pounds weight which is believed to be the largest topaz of gem quality in existence, was acquired by the Curator on his recent expedition to Brazil.

The Museum acquired by exchange a series of 130 fossil shells collected in Mississippi and five minerals of exceptional quality from Nevada. Five individuals of the Ness Co., Kansas, meteorite were acquired by purchase. Other purchases were a specimen of troilite of terrestrial origin and a skull of the fossil *Hipparion* from Greece.

ZOOLOGY.—A total of 26,298 specimens was added to the collections in the Department of Zoology. This includes the largest number of vertebrates received in one year in the history of the Department. The specimens are divided as follows: Mammals, 2,882; birds, 5,181; eggs and nests, 26; reptiles and amphibians, 3,848; fishes, 12,995; insects, 1,336. The majority of these were received from the Captain Marshall Field Expeditions to Peru, Chile, Honduras, and Texas, all of the expeditions being unusually productive. This is especially true in the Division of Mammals where but few purchases were made, and the gifts, although valuable, were not numerous. Of the 2,882 mammals accessioned, 2,857 were received from Museum expeditions. These were mostly from Peru, Chile, Argentina and Brazil. Two skulls of wild-killed Elephants were contributed by the Arthur B. Jones Malay Archipelago Expedition. The principal gift was that of two well prepared specimens of the Fringe-eared Oryx from East Africa, collected and presented by Mr. P. S. Colburn and Mr. A. M. Lindsay.

The accessions of birds amount to a total of 5,181 specimens, of which 2,519 were purchased, 2,498 were received from Museum expeditions, and 384 were obtained by exchange. These birds are from a wide geographic range, coming as they do from Peru, Chile, Argentina, Brazil, Ecuador, Uruguay, Colombia, British Honduras, Dominican Republic, Austria, Germany, Norway, Canary Islands, Azores, New Guinea, and the United States. An important accession by purchase was the Fischer collection of German and Bavarian birds, consisting of 1,823 specimens especially well prepared and in adequate series. These formed a welcome addition to the Museum's collections, in which Old World birds had been inadequately represented. Other purchases included 202 birds from Ecuador, 129 from Argentina, and 263 from various parts of South America which, combined with the expedition material, added many



HALL 33. PALEONTOLOGY.

species of considerable rarity and many others not at present represented in the collections. Most noteworthy among the single specimens is a fine example of the Blue Bird of Paradise from New Guinea, one of the rarest and most beautiful of its family.

In the Division of Reptiles and Amphibians, the accessions for the year reach a total of 3,848 specimens, by far the most important in the history of the Museum and actually increasing the total number previously possessed by nearly one-half. Of these, 403 specimens were received by gift, 510 by purchase, and 2,935 from Museum expeditions. Important gifts are 103 specimens from St. John's college, Belize, British Honduras; 173 specimens from Wisconsin, from assistant curator Karl P. Schmidt, and his brother, F. J. W. Schmidt; 38 from Texas from Col. M. L. Crimmins; 42 from Rothschild's Chicago Aquarium, through the courtesy of Mr. John Bichele; and 7 specimens from northern Peru from Mr. Axel Olsen of Gloversville, New York. Important purchases are 300 exotic species from W. F. H. Rosenberg; 4 specimens of the peculiar African Soft-shelled Tortoise received from Mr. Arthur Loveridge; and 174 specimens collected in South Carolina by Mr. Edward A. Hyer. The Captain Marshall Field Expedition to Honduras obtained 1,275 reptiles and amphibians; the expedition to Chile and Argentina 687; the expedition to Peru 97; and the expedition to Louisiana and Texas 758.

Accessions of fishes were numerous and important, amounting to a total of 12,995 specimens, of which 10,342 were received from expeditions, 2,294 were gifts, 330 were purchased, and 29 were received in exchange. The largest single accessions were of 8,000 fishes from southern Texas and 2,000 from southeastern Louisiana, collected by the Captain Marshall Field expedition to those states. Some of these may prove to be new to science and many will serve to clear up disputed points in the classification of North American fishes. Other expeditions to South and Central America, although not primarily seeking fishes, secured considerable material from this territory, including new and undescribed species. A collection of fishes from Marion County, Florida, was purchased and, since the locality is not one previously represented in the Museum's collections, the specimens will have considerable value. A very fine Red Snapper and a beautiful Lake Trout, for exhibition, were purchased from Mr. W. M. Walker. These two were practically gifts, since the specimens were ordered and selected especially for the purpose, and the charge made was nominal. Gifts of fishes include the following: 700 specimens from Louisiana and the Gulf of Mexico from the Southern Biological Supply Company, through its president, Mr. Percy Viosca, Jr.; a large specimen of the Pacific Wolf Eel from the Booth Fisheries

Company; a hybrid pickerel from Mr. George McNeill; and various specimens, mainly sunfishes, from Lincoln Park Aquarium, through the courtesy of Mr. F. S. Young. The management of Rothschild's Aquarium has continued the practice of giving the Museum the more interesting of their fishes that die in the tanks. Nearly 140 specimens were received from this source. The New York State Conservation Commission and the Wisconsin Conservation Commission have assisted in obtaining material for a special exhibit of pikes, pickerels and muskallonge.

Two very interesting fishes were received in exchange. These were the Australian Lungfish, of which three specimens and a number of eggs were received from the Queensland Museum, Brisbane, Australia; and the Deep Sea Flounder (*Pelecanichthys crumenalis*) from the U. S. National Museum. Very few specimens of this flounder ever have been taken. It differs from all other known flounders in having a very long lower jaw, which carries a pouch suggesting that of a pelican.

The insects accessioned consisted of 25 lots and include 1,366 specimens. The largest and most noteworthy acquisition was the purchase of an authoritatively classified collection of 600 dragonflies, representing 122 species from Brazil, a country from which the Museum had previously obtained but few specimens. Another desirable purchase consisted of 100 butterflies and 10 moths from southwestern India. Among the donations, the most valuable were 99 dragonflies from Central and South America, a gift from Mr. Jesse H. Williamson, Bluffton, Indiana; 134 butterflies and moths collected in Colorado and presented by Dr. C. E. Hellmayr; and 178 insects of various orders from British Guiana, a gift from Dr. B. E. Dahlgren. On the Captain Marshall Field expeditions, 108 desirable scorpions, centipedes, spiders and insects were obtained from the southern United States, Central America, and South America.

Accessions of skeletons include one hippopotamus and 30 other mammals, mostly South American, and one iguana and 2 crocodiles.

EXPEDITIONS

During the past year the Museum has carried on more active and successful expeditions than in any previous year of its existence. The wide geographical range of the exploration parties has meant a corresponding increase in the number and importance of the additions to the collections. Of the twelve major expeditions in the field, seven operated in South America. The other expeditions carried on their research in China, the Malay Peninsula, Central America and the Gulf

Region of the United States. Important results are being obtained from the joint expedition of Field Museum and Oxford University, England, which is operating at Kish in Mesopotamia. Recent excavations have shown that the workers have actually discovered the seat of the oldest empire known to history.

The personnel of nine of the expeditions have returned to take charge of the classification of the material obtained in the field. Three of the exploration parties are still at work in the field, and another was dispatched to Central Africa late in November.

ANTHROPOLOGY.—The Department of Anthropology had four expeditions in the field during the year, covering China, Mesopotamia, Malaysia and Colombia.

The curator of the department, Dr. Berthold Laufer, left in April for China, the expedition being under the auspices of Captain Marshall Field. Dr. Laufer had exceptional opportunities for studying private collections of prominent Chinese at Shanghai and Peking, and specialized in the study of Chinese civilization during the Sung period, that great age of Chinese renaissance in which the traditions of antiquity were revived and the foundation was laid for a truly national art. Great efforts were made to secure representative collections of Sung pottery and painting. Of the former, 170 specimens from kilns of both southern and northern China were obtained, including all types and glazes, among these 6 Chün yao, 25 Ting yao, 44 Temmoku, and 13 Celadons, many being of great beauty and rarity. Three bits, a Kuan yao, a Ju yao, and a Ko yao, belong to the earliest products of Sung porcelain and are extremely rare. A large portion of this pottery was excavated in recent years on the site of the city Kū-lu in the southern part of the province of Chili, which was submerged by a flood in A.D. 1108. All this pottery must have been made prior to that date and therefore can be safely placed as to period. Aside from its artistic value it will serve to illustrate many interesting features of Chinese daily life in a mediæval community. From the same locality were obtained four carved wooden panels and a number of engraved wooden stamps or blocks for printing designs on textiles, which belong to the oldest printing-blocks in the history of this industry. Twenty-three paintings, half of this number from the Sung period, were obtained, all of superior quality and interest in subject matter. Five remarkable silk-woven tapestries, one of the Ming dynasty and four of the K'ien-lung period (1736-95), were secured, also silk brocades and cut velvets of this latter period. Extensive collections were made of artistic baskets (75) covering all localities of central and southern China where

basketry is made; 84 pieces of old lacquer ware of the Ming, K'ang-hi and K'ien-lung periods, carved or painted with landscapes and designs in colors or gold, or inlaid with scenes in mother-of-pearl. Ancient glass, bone and ivory carvings, bamboo and wood carvings, weapons, fans, musical instruments, tobacco and smoking utensils were also obtained. Specimens were secured of ancient silver together with a remarkable cast figure of a water-buffalo. Many additions were made to the present collection of jade, the new acquisitions amounting to 185 specimens. Ceremonial knives and ornamented disks of enormous size, three unusually large tubes symbolizing the deity Earth, and a comprehensive assortment of jade and other stone implements are deserving of particular mention. A red-lacquered and elaborately carved bridal chair or palanquin, in which the bride, on the day of marriage, is escorted into the bridegroom's house; a large dragon-boat of the same character, which is carried in religious processions, at the annual dragon-boat festival; and an imposing red and gold lacquered bed, adorned with beautiful wood carvings in relief and open-work, of the K'ien-lung period, will make striking objects for exhibition. The curator made it a special point to gather relics of the Manchu dynasty and secured five exceedingly fine imperial costumes of the eighteenth century, of silk tapestry or silk embroidery, elaborate head-dresses of princes and princesses, a complete set of the silk girdles with white jade clasps conferred by the emperor on the princes of the imperial house, six bamboo shades with pictures formed by strips of silk wrapped around the fine bamboo rods and exclusively made for the palace, the dress of a lady of the Manchu aristocracy with the peculiar high coiffure complete with all jewelry, the armor of a Manchu general from the K'ang-hi period (1662-1722), a complete series of the bows used by the Manchu in military examinations for testing the strength of candidates, and fans used in court ceremonies and other objects. After a thorough study of the stage and drama in Peking, fourteen actors' costumes were selected, which will be added to the Hall of Oriental Theatricals. These are the five national heroes, Kwan-ti, Chang Fei, Chu-ko Liang, Liu Pei, and Chao Yün, accompanied by four soldiers; Ma-ku, a benign goddess of blessing; Yang Kwei-fei, a famed court-lady of the T'ang dynasty; an amazon or military heroine; and two very popular figures, an official and his wife from the drama "The Meeting in the Mulberry Garden." All these costumes are complete with head-dresses, coiffures and all of the paraphernalia pertaining to them. It is estimated that the new acquisitions, which number over 2,000, not including the theatrical accessions, will require about 33 exhibition-cases.

As a result of his researches, the curator is planning a publication on China's civilization in the age of the Sung, which will analyze all departments of art which flourished at that time, including novel contributions to the history of Sung pottery.

Reports received during the year from Professor S. Langdon indicate that the joint expedition of Oxford University and Field Museum in Mesopotamia has made good progress in the work of excavation. Mr. E. Mackay, field director, has unearthed the south-east side of the temenos platform on which stood the temple of the prehistoric war-god, Ilbaba, and the goddess of war, Innini or Ishtar. This temple was known as Emeteursag, and beside it on the platform stood the lofty tower in seven stages known as "House of Admiration, the Far-famed Abode." It was hitherto a controversial point whether these lofty ruins which rise out of the plains east of Babylon really represent the site of Kish, the seat of the oldest Sumerian and Semitic rulers. The excavator has fortunately found a stamped brick of Samsuiluna, seventh king of the first dynasty of Babylon (2080-43 B.C.), the inscription on which settles the question definitely and proves that the expedition has actually come upon the lofty stage tower of the capital of the oldest kings and seat of the first empire known to history. Now that the temple of the war-god of ancient Sumer and Akkad has been definitely located, the excavators are rapidly advancing toward the inner temple, where they hope to come upon the temple library. In May, just before the intense heat compelled the cessation of the work, Mr. Mackay found walls built of plano-convex bricks, a positive indication of the oldest Sumerian period. Down to about 2900 B.C. the masons invariably laid their walls with this type of brick, which is not made in moulds, but is fashioned by hand on a flat surface, the top being left convex, and each side bearing two of the mason's finger prints. Near these older walls was found black incised pottery inlaid with white designs. This method of decorating pottery by incrustation seems to have been a Sumerian invention, and provided a substitute for painted designs. A remarkable discovery was made in the tower mentioned above. The original height of the tower cannot have been less than 180 feet, and its four sides measured over 200 feet. The first stage of the tower, which is one of the best preserved of ancient Babylonia, has rows of chambers connected by a corridor. Beneath the pavements of some of these chambers were found inscribed tablets. This is the first known discovery of a series of chambers within a stage tower. Beneath the ruins of a still larger and apparently more ancient mound, Ingharra, two miles east of Oheimer, lie supposedly the palaces of the early kings of Kish, who ruled all of

Sumer and Akkad at various periods from 5000-2872 B.C. Excavations at Ingharra were begun September 15th in connection with those now in progress at Oheimet. The oldest temple ever discovered in Mesopotamia was found on this occasion. Professor S. Langdon left Oxford on December 13th to take personal charge of the expedition.

The results of the work of the Arthur B. Jones expedition to Malaysia were reported last year with reference to the Federated Malay States. At the close of 1922, Dr. Cole, in charge of the expedition, transferred his activities to Central Sumatra to study the Menangkabau of the Padang Highlands. These people, the most advanced of all the Malay tribes, usually live in small villages, the members of which are of the same family or clan. Since the maternal family is the unit of government, it owns the land and controls marriage. The villages are surrounded by terraced fields in which rice, manihot and tobacco are grown, and extensive gardens maintained, while each settlement raises a considerable number of cinnamon trees. While agriculture is the chief occupation, the men are expert wood carvers, silver and gold smiths, and metal workers; the women weave and embroider in gold and silver thread. Careful studies of the social and economic life were carried on, and a collection of about 800 objects gathered, emphasis being laid on wood carving and textiles woven in gold and silver thread. The complete outfit of a bride and groom was secured, and a miniature village was constructed to scale. The Toba Batak of north central Sumatra were next visited, and a collection of more than 400 articles was obtained to illustrate that unique culture. These people, who are just emerging from cannibalism, have a highly developed ceremonial life, which centers in the rites of the magicians. Around these powerful individuals has been developed a cult distinguished by the use of elaborately carved magical staffs, carved heads for the house fronts, a series of magical figures, and by many books of secret formulae. The metal work of this tribe is also of high excellence and their weaving is of good quality. The collection contains examples of their industries, together with the complete front of a carved house. The island of Nias was visited, and considerable material gathered, which represents its fast vanishing culture.

While in Java, the expedition secured 450 specimens of Javanese workmanship to supplement the collection now on exhibition in the Museum. These specimens consist chiefly of metal work, weapons of former times, jewelry, and batik work. Finally, a scouting trip was made into the center of Borneo. Starting from Bandjermassin in southern Borneo, the expedition proceeded up the Barito river to a point just south of the





BLACK, CINNAMON AND GLACIER BEARS.

TAXIDERMY BY JULIUS PRIESSER.

About one two-thirds natural size.

equator and then struck inland on foot into the country of the Siang Dyak. This tribe does not possess the rich culture found in northern Borneo, but nevertheless a very interesting collection of 200 objects was obtained. Of chief interest is a memorial pole, carved to represent a powerful chief who died some years ago. At the time of its erection a number of captives were sacrificed, and each year since then a human or animal sacrifice has been held in its honor. The collections from the Dutch Indies total more than 2,000 objects. Measurements were made on about 200 individuals; while about 500 photographs illustrate the regions visited.

The work of the Captain Marshall Field Expedition to Colombia reported last year was continued by Assistant Curator Mason from January until July 10th of this year. The investigator's attention was divided between archeological and ethnological research. He spent some time exploring the Sierra Nevada region, but the ancient city of Pochueica supposed to be located there could not be discovered. He made also some ethnological and linguistic studies among the Arhuacos and Goajiros. The result of this year's work is represented by a collection of 822 specimens, which, with the number of 2,851 obtained last year, yield a total of 3,673. The archeological collection differs only in details from that reported in 1922. Stone axe-heads, small pottery vessels, fragments of relief from pottery vessels and carnelian beads are prominent. Special mention may be made of some fine black pottery vessels, an extraordinary black pottery whistle, a few small pendants and similar fine small stone objects, a number of objects of banded reddish stone carved in the shape of spiral shells, several necklaces of unusually fine beads, and a double ivory axe-head covered with gold mosaic, the two latter groups secured from the Goajiro Indians. The collection of Arhuaco ethnology is a small one and was secured with great difficulty, as the villages were practically inaccessible and mostly deserted, and the few natives disinclined to sell. Nevertheless, most of the native industries, implements and ornaments are represented, except for their woven cloths and garments. The largest group of specimens obtained is the collection of knitted bags or mochilas. Those bags which bear geometric designs in color are the most striking for display purposes and art study. The large Goajiro collection was secured in a few days, as the Indian camps are but a short distance from Riohacha and the natives semi-civilized and eager to sell their objects. This collection contains practically all objects made and used by these Indians, except the more esoteric religious and ceremonial objects which, as in the case of the Arhuaco, cannot be secured on short acquaintance. The

largest group of objects is comprised of woven belts or fajas, arrows, necklaces of beads made from black coconut shell, bags of knitted maguey-fiber or cotton, pottery vessels, and small vessels of calabash. Especial mention should be made of the necklaces of fine ancient beads. Wherever traces of ancient occupation were found, notes of everything of importance were taken, but, except for the work at Teran, the first week of the year, little of interest was seen. A total of 383 negatives of archeological sites and other views were taken, also 50 phonographic records of Indian music and songs.

BOTANY.—During the year the Captain Marshall Field botanical expedition to Peru, commenced in 1922, was continued by assistant curator J. F. Macbride and Dr. George S. Bryan of the University of Wisconsin. The latter sailed from New York February 22nd and was joined at Panama by Mr. Macbride, who, having sailed from New Orleans February 14th, had spent the interim collecting in the Canal Zone. He obtained there 250 species, mostly in triplicate, including various interesting plant products of the Panama Republic.

The work performed by the expedition was definitely divided; Dr. Bryan devoted his entire attention to photography and the non-flowering plants, mosses, lichens, liverworts and fungi, while Mr. Macbride secured the flowering groups. The collectors co-operated in obtaining the ferns.

Lima, Peru, was reached March 6th, where the collectors were entertained by the physician-botanist, Dr. A. Aspiazu. Preparations for the work in the interior were completed by the 11th, on which date actual collecting began at Chosica in the Andean foothills, an hour's train ride from Lima.

As the heavier camp and botanical equipment had been stored at Huanuco, the base for last year's operations, the expedition proceeded to this town which lies 60 miles down the Huallaga River from Cerro de Pasco. Huanuco was reached April 5 with about 400 numbers collected, stops having been made en route at various altitudes from 8,000 to 15,500 feet. These stops included the railroad stations of Matucana and Rio Blanco, on the coastal slope of the western Andes, and the Inter-Andean railroad terminals, La Oroya and Cerro de Pasco. At these two mining towns many courtesies were received from the officials of the Cerro de Pasco Copper Corporation, notably Mr. Colley, Mr. Miles Morgan and Mr. R. C. Philpott. The journey by pack-train from Cerro de Pasco was broken by short stops for collecting at La Quinua, Huariaca, Ambo and Huanuco.

Mito and Cani, villages about 15 miles west of Huanuco, were next visited where some 300 numbers were collected, after which work was resumed at the base, Huanuco, and preparations made for a trip about 100 miles east, by trail, to Pozuzo situated at an altitude of 2,200 feet. This journey took the expedition across the eastern Cordillera mountains at an altitude of about 12,000 feet. Collections, totaling over 1,500 numbers of flowering and 500 non-flowering plants, were secured at twelve localities, the most important camps having been made at Piedra Grande, Muña, Tambo de Vaca and Cushi. These localities are in tropical upper Amazonian country, which, with its mile-deep river canyons, offers much variety in vegetation. At Pozuzo the expedition was greatly indebted to the hospitality of Sr. Ismael Ballisteros.

The collectors, accompanied by their three Peruvian helpers with 12 cargo beasts, returned to Huanuco from Pozuzo on foot, reaching the base town July 10. There saddle horses were obtained, the party leaving July 15 for the Japanese hacienda Pampayacu which is located at the mouth of the Rio Chinchao about four days' trip below Huanuco. Collection en route was especially aided by the hospitality of Sr. E. Malatesta at his hacienda Villcabamba. Through the courtesy of Mr. M. Sawada of Huanuco and his manager at Pampayacu, Mr. S. Kusumara, several days were spent in work at Pampayacu, which resulted in large collections.

On August 6 the collectors were again in Huanuco and prepared for the return journey to the coast. At La Oroya, however, a side trip was made to La Merced, 60 miles farther in the interior, for the purpose of comparing the tropical vegetation there with that which had been studied at the more northern regions about Pozuzo and Chinchao. As Dr. Bryan had to resume his University work, he left on August 13, and after some collecting of marine algae near Lima sailed for New York August 20. Mr. Macbride continued the work at La Merced until September 7, securing over 500 numbers. He was very hospitably entertained by a local naturalist, Sr. Carlos Schunke, who also aided him greatly in his work. Upon his return to La Oroya September 8, a hurried trip was made by rail to Huancayo where some interesting economic material, such as native foods, fibers and medicines, was obtained at the great fall market. Some days (September 13-25) were spent collecting in the hills about Lima, where he was kindly assisted by Dr. A. Weberbauer, the distinguished botanist.

The expedition secured in all 4,250 numbers, or about 11,000 specimens, of which about 750 numbers are Cryptogamic. The latter, gathered by Dr. Bryan, probably constitute the largest single collection of non-flowering plants ever made in South America.

GEOLOGY.—Under the auspices of the Capt. Marshall Field Fund a second expedition to Brazil for the purpose of collecting gem, mineral and ore specimens was made by the Curator. Exploration on this trip was carried on chiefly in the state of Bahia.

It was deemed especially desirable to visit a region about the headwaters of the Paraguassu river, where besides ordinary diamonds, practically all the black diamonds or carbonados used in various industries are obtained. This district can ordinarily be reached directly from the city of Bahia by means of a few days travel by rail, steamer and mule, but on arriving at Bahia, it was learned that a serious epidemic of fever in the diamondiferous region made it inadvisable to visit it at that time. Accordingly a much more circuitous course was taken which enabled much of the region to be seen without passing through the infected district.

At the city of Bahia, collections of typical rocks and minerals of the region were made, and from the State Exposition in progress at the time specimens of various ores and minerals obtained. Journey was then made by rail to Joazeiro, on the San Francisco river, manganese and chromium ores being collected on the way.

The San Francisco was then ascended to Chique-Chique, a city located on the western border of the Chapada Diamantina or diamond-bearing district. By crossing this district in a south-easterly direction it was possible to traverse a large area where minerals are obtained at various points. Travel in this region is confined to walking or mule riding and as the latter method seemed preferable, at Chique-Chique an outfit of nine mules with drivers and supplies was secured. At Chique-Chique a number of good specimens of commercial rock crystal and other minerals were collected. San Ignacio was the next of the important producing districts visited. Here the first of the diamond-bearing conglomerates were seen and a number of specimens collected. At Gentio a well-known auriferous area was crossed and a number of samples taken. Subsequent to this an extensive limestone area was traversed which yielded little in the way of minerals but at the hamlet of Mulungu in this area a hitherto unknown deposit of fossil bones of an extinct giant ground-sloth and of other extinct animals was found. Though the expedition was not equipped for transporting large quantities of this material, a well preserved pelvis, a portion of a skull with teeth and some leg bones were successfully collected and transported. At the eastern edge of the Chapada Diamantina two important diamond-bearing localities, Palmeiras and Mucují, were visited and good specimens of the various kinds of diamonds and

the accompanying minerals occurring there were obtained. These specimens included ordinary diamonds, carbonados, a Balas diamond and typical, associated minerals.

Journey was then made southward through the mining regions of Rio das Contas to Bom Jesus dos Meiras where some recently opened mines of emerald, topaz and other minerals were visited and valuable specimens, many of which were of gem quality, were obtained.

The advent of the rainy season making it unadvisable to go farther into the interior, return was made to Bahia. While it is not possible as yet to fully tabulate the results of the trip, several hundred gem and mineral specimens were collected, besides ores and many specimens illustrating other geological features. Some zoological and botanical specimens were also collected. Several hundred photographs were made in the regions visited, some of the localities photographed being little if any known to science. The distance travelled on mule-back was about 700 miles and the time occupied three and a half months.

The Curator was accompanied throughout the trip by Mr. E. Jacy Monteiro, an engineer of Rio de Janeiro, who rendered valuable service. Many courtesies and helpful cooperation were received from various residents of the regions visited, special acknowledgements being due to Coronel Manoel Aicantara de Carvalho of Gamaleiras, Coronel Agrario de Magalhaes Avelino of Chique-Chique, Coronel Jose Alvez of Palmeiras and Mr. Frederick E. Johnson of the Central Brazil Presbyterian Mission.

Previous to the Bahian trip the Curator spent some time in Rio de Janeiro in order to obtain information and make needed preparations.

During this period he carried on negotiations which resulted in securing for the Museum what is believed to be the largest specimen of gem topaz ever found. This is a single crystal weighing 90 lbs., which is practically all of gem quality. An entire meteorite from a previously unrepresented Brazilian locality was also obtained. This meteorite is a complete iron individual. Valuable specimens of Brazilian gems of unusually large size and high quality were also obtained. These included an aquamarine of 180 carats, a large amethyst cameo, a bracelet of Brazilian tourmalines, a large rubellite and a blue topaz of 35 carats weight.

Various Government and other officials as well as private individuals rendered generous assistance during this period, especial mention being due to Dr. Antonio Olynho dos Santos Pires, Chief of the Brazilian Exposition, Drs. Horace E. Williams and Jorge B. de Araujo Ferraz of the Servico Geologico of Brazil, Dr. John H. Janney of the International Health Board and Mr. Wm. G. Homeyer of Kodak Brasileira, Ltd.

The Captain Marshall Field Expedition for Vertebrate Paleontology, with Associate Curator E. S. Riggs and Preparators G. F. Sternberg and J. B. Abbott, as chief personnel, has remained in Argentina throughout the year.

Owing to the fact that Patagonia was probably during Cenozoic time an isolated continent, upon which a system of mammalian life which was quite distinct from that of the Northern Hemisphere flourished, and since the Museum has hitherto had only a small and fragmentary series from a single period of this area, the party devoted itself chiefly to making as complete collections as possible of the fossil mammals of Patagonia.

Work was begun in the southern extremity of that country, near the Port of Rio Gallegos, since in the Santa Cruzean formation there the extinct fauna was best known and specimens could be most readily obtained. Beginning with the first days of January, active collecting was carried on during the remainder of the southern summer. The shores of bays and inlets and the exposed sea-wall of the Atlantic proved to be the most fertile collecting grounds, and considerable material was obtained until the approach of winter and first falls of snow in May, made it advisable to find winter quarters. In search of more favorable conditions therefore the party moved northward. In late summer however, a single digression was made in order to investigate a half-authentic report of a fossil "Tertiary man" and to visit an alleged "buried city." The former was found to be a concretion, and the latter a lava dike.

The journey northward was undertaken by motor car, a geological reconnaissance being made en route from Santa Cruz to Commodore Rivadavia. At the latter port, heavy snows, followed by rains and impassable roads, arrested the progress of the expedition, at the middle of June. A winter camp was then established. Collectors Sternberg and Abbott carried on such work as weather permitted, while Associate Curator Riggs proceeded to Buenos Aires to arrange certain formalities preparatory to shipping the collections previously made. The latter task required securing permission from an Argentina National Commission of Museum Directors. Repeated conferences were held with the members of the Commission, the collection was transported to the Museo de La Plata, and a large part of it unpacked, unwrapped, displayed, inspected, re-wrapped, re-packed and stored. After two months of such labors, and the seizure of such specimens as were recognized by the Commission as new to science, the necessary permit was granted. The collection from the Santa Cruz formation, consisting of 43 boxes of fossils was thus freed, and in December was shipped to the Museum.



● INDICATES LOCALITIES FROM WHICH SPECIMENS WERE RECEIVED IN 1923.

The second field problem undertaken by the expedition was to find fossil-bearing localities in, and make collections from, the geological formation designated as the Deseado.

While stormy weather and impassable roads blocked for a time repeated efforts of the collectors to move from winter quarters or to resume active work, late in August a region of high, snowy pampa lying to the northwest of Comodoro Rivadavia was successfully traversed and a camp was established on the Rio Chico of Chubut. Fossil-collecting was there resumed. During the period of enforced hibernation, some collections of fossil cetaceans, fossil invertebrates, and of recent birds and mammals, were made.

A movement toward Lago Coluhe Huapi was arrested by recurring snows and heavy rains, and the party detained until the end of October. During that period a wide area to the westward of the Rio Chico was explored by means of horse transportation, this method having been heretofore impossible because of a shortage of feed. However, in a wide expanse of Tertiary hills in this area no fossil-bearing localities were discovered.

In November the party moved by motor toward the region of Lakes Munsters and Coluhe Huapi. Collections were made from various localities of the Deseado formation about the lakes and along the Rio Senger. The occurrence of dinosaurian fossils was noted, but it was not deemed advisable to collect these ponderous specimens from localities so far from the Museum. The San Bernardo Range (of hills) was reconnoitered in quest of new fossil-bearing localities and the complex geology of the region noted.

The year ended with a movement to the north and west from Colonia Sarmiento.

The results attained during the year may be enumerated as follows: From the Santa Cruzean and adjacent formations, to westward and northward of the Port of Rio Gallegos, a collection of 262 specimens of fossil mammals, 4 specimens of fossil birds, and 64 specimens of fossil shells, was made. A few lithological and archeological specimens, as well as a limited number of recent mammals, were also collected there.

The occurrence of Sauropod Dinosaurs, comparable to those of the Northern Hemisphere, in the vicinity of Lake Cardiel, Territory of Santa Cruz, was determined. In the vicinity of Rio Gallegos and Rio Coyle, fifty negatives of geological and general interest, and nine rolls of cinema film were made.

One fossil cetacean and 65 fossil invertebrates were collected from the Patagonian Beds near Comodoro Rivadavia, and eighteen negatives were made showing the geological features and the petroleum fields near the port.

From the Desendo formation at various localities, 54 specimens of fossil mammals, one of fossil bird, four of fossil fish, and 37 of fossil invertebrates, and from the Cretaceous formation, one specimen of fossil reptile, were collected.

Of recent animals there were collected five mammal skeletons, 7 mammal skulls, 18 mammals in formalin, 9 lizards in formalin, 21 marine invertebrates, 20 prepared bird skins, 2 rhea nests with eggs, and 1 martinet nest of eggs.

Of archeological specimens, 64 finished Indian celts, 48 rough celts and scrapers, and 11 boladores, martels and axes were collected and of botanical specimens 450 pressed plants and 7 dried shrubs.

ZOOLOGY.—Five zoological expeditions of major importance were in the field during the year. Two of these were continuing work begun in 1922, two were completed in 1923, and one was organized and started late in December.

At the beginning of the year, the Captain Marshall Field Peruvian Expedition was still engaged in collecting specimens native to central Peru. The expedition was divided into two groups, one, consisting of assistant curator Heller and Mrs. Heller, collected mammals, while assistant curator Zimmer devoted his time to the collection of birds. Using the towns of Huanuco and Ambo as bases, the expedition worked twenty localities along the Huallaga and Marañon valleys, differing in altitude from 4,000 to 14,000 feet. Shortly after the first of the year, Mr. Zimmer proceeded over the Andean mountains to the valley of the Chanchamayo River where additional material was collected. Leaving this valley, he proceeded by trail to Puerto Bermudes, the final collecting station. Starting on the Pichis River, Mr. Zimmer then worked toward the coast, making a few collections en route, touching also at the towns of Manaos and Pará, on the lower stretches of the Amazon. Meanwhile, Mr. and Mrs. Heller after having worked down the Huallaga to Tingo Maria, returned to Huanuco and crossed by the difficult trail from Huanuco to Pozuzo, where extensive additions were made to the collections. They worked down the Pachitea River to the Ucayali and continued to Iquitos whence they took steamer down the Amazon. At Pará, near the mouth

of the Amazon, another stop was made and a number of important specimens were purchased. Here, also, additions were made to a collection of live animals which the expedition brought to Chicago for the Lincoln Park Zoo.

The specimens of mammals and birds obtained by the Peruvian expedition amount to a total of 3,500, forming one of the largest collections of vertebrates ever brought out of the Andean region. Careful study of the mammals has not yet been possible, but it is evident the collection contains various new species and others exceedingly rare. Many species of monkeys, usually difficult to secure, were obtained in large numbers. Among them are several specimens of two species of the Ouakaris or Bald-faced Monkeys, and one of the Imperial Marmoset, a very rare species characterized by a long flowing "moustache" of very suggestive appearance.

The habitat was discovered of the large spotted rodent called Rucupí, a species of the genus *Dinomys*, only genus of the family Dinomyidae, and known mainly from a few scattered specimens in European museums. A series of sixteen skulls of this animal was obtained, together with seven skins and one living animal which was successfully transported to Chicago where it is now living in good health in the Lincoln Park Zoo, the first of its kind ever to enter the United States alive.

The birds obtained by the expedition number some 400 species and subspecies, mostly new to the Museum's collections and including some rare forms not previously represented in any American museum, besides others quite new to science. Descriptions of ten of the new forms have been made for future publication. The collection is especially rich in humming birds, of which not less than thirty forms were obtained.

The Captain Marshall Field Expedition to Chile and Argentina was well under way at the beginning of the year, having started from Chicago in November, 1922. As noted in the last annual report, this expedition was in charge of the Curator of Zoology who was accompanied by Mr. C. C. Sanborn of the Division of Birds and Mr. Boardman Conover, volunteer associate. Through the courtesy of Dr. E. Moore, Director of the National Museum of Chile, the taxidermist of this museum, Sr. Luis Moreira, was granted leave of absence to enter the employ of the expedition for a period of three months. Valuable advice and assistance to the expedition were rendered also by Dr. Carlos Porter of the same institution, and by Mr. Alfred Houston of the Braden Copper Company. For many courtesies and privileges, special acknowledgment is due the officers and employees of the Compañía Industrial del Aysen. Work was begun on the island of Chiloe, on the well watered and heavily

forested coast of south central Chile. Later, the party divided and various points in southern Chile were visited. An important trip was made southward through the Guaiteca Islands to the mouth of the Rio Aysen and thence inland across the mountains to the edge of the Patagonian pampas, near the Chile-Argentina boundary in about S. Lat. $45^{\circ} 50'$. Returning northward, various points in central Chile were worked, and in Santiago some days were spent in studying the collections of the National Museum of Chile, especially in making careful notes on the important types of mammals preserved there. Late in May, Dr. Osgood and Mr. Conover passed on to Argentina via the Transandine Railroad, leaving Mr. Sanborn to continue working northward in Chile. In Argentina, a series of short but very effective trips were made in the provinces of Mendoza, Buenos Aires, Tucuman, Jujuy, and Misiones, after which return to the United States was made in the month of August with brief stops in São Paulo and Rio de Janeiro, Brazil.

At the end of the year, Mr. Sanborn was still working in northern Chile, having passed successively from the province of Valparaiso to Coquimbo, Copiapo and Antofagasta. This took him into the desert region of northern Chile where conditions are unfavorable for collecting specimens in large quantities, but where the few that can be obtained are of very great interest and value. He passed from one isolated oasis to another, in each case making practically complete collections of all the vertebrates, mammals, birds, reptiles and amphibians.

The results of this expedition are too numerous and varied to be mentioned in detail. The number of specimens collected approximates 3,000, equally divided among mammals, birds and cold-blooded vertebrates. Not only most of the species but most of the genera and not a few of the families represented are new to the Museum's collections, and they bring to the United States a basis for study and understanding of the whole fauna of the southern half of South America. The continued work in Chile from the deserts of the north to the forests of the south, and from the coast to the crest of the Andes has produced a collection of the animals of this country which is doubtless the most comprehensive in existence. Much desirable material for exhibition also was obtained, including nearly all the larger animals of Chile. Among interesting mammals are the tiny deer known as the Pudu, the large mountain deer called Huemul, the wild llama or Guanaco, the fur-bearing rodent Coypu or Nutria, the rare and beautiful Chinchilla, and the small blind armadillo called Pichiciego. The birds collected include the Black-necked Swan, the Andean Flamingo, the flightless Steamer Duck, the Torrent Duck, the Penguin, and many species of smaller size, among

which are a number which preliminary study shows are new to science.

The Captain Marshall Field Expedition to British Honduras and Honduras engaged the time of assistant curator Schmidt and taxidermist Walters from January 18th to June 2nd. The expedition sailed from New Orleans, landing at Belize on January 23rd. Five weeks were spent in British Honduras, principally at Belize and at the United Fruit Company plantation at Middlesex. At Belize, a small crocodile was secured which proves to be a "lost" species not collected during the past fifty years. As this crocodile is strikingly different from the common American crocodile, the Museum is fortunate in having not only the specimens but a plaster mold from which a celluloid model has been prepared by Mr. Walters. From Belize, the party sailed via schooner to Puerto Cortes, Honduras. In Honduras, the principal base of operations was San Pedro in the valley of Uluá and Chameleón Rivers. The ranch of Mr. M. S. Miles, at the foot of the Espiritu Santo Mountains offered many facilities for work on plaster molds. The field work of the expedition was further facilitated by the hospitality of Mr. Miles, as well as by the advice of Dr. S. M. Waller of San Pedro. The principal collections in Honduras were made in the tropical lowland at San Pedro and at Lake Ticamaya, east of San Pedro; on the Espiritu Santo Mountains, west of San Pedro at altitudes above 4,500 feet, in a hardwood cloud-forest; and in the course of a rapid transcontinental survey from Puerto Cortes via Lake Yojoa, Siguatepeque, and Tegucigalpa to San Lorenzo on the Gulf of Fonseca. Complete data and collections for a habitat group of the American Crocodile were secured at Lake Ticamaya, including plaster molds of crocodiles varying in size from four to eleven feet in length. These molds will be used later for reproduction in celluloid. The transportation of these large plaster molds was solved by constructing special packing boxes and lashing the molds to an inside framework. The fifty-two molds secured by the expedition reached the Museum without breakage. A collection of tree-climbing salamanders, living almost entirely in the air-plants which cover the trees, together with three new species of tree frogs, was made in the mountain cloud-forest. One of the tree frogs is especially noteworthy as it breeds in the water contained in the leaf-whorls of the bromeliaceous air-plants. The collections secured at Lake Yojoa, Siguatepeque, and Tegucigalpa brought out the strong contrast between the faunas found along the Pacific side of Central America and those established along the Caribbean sea. The total collections of the expedition number 1,275 specimens of amphibians and reptiles, 250 fishes, 50 bird-skins and 30 mammals.

The Captain Marshall Field Expedition to Louisiana and Texas was conducted by assistant curator Weed during July, August and September. The first half of the time was spent in southeastern Louisiana, a region which has been very largely neglected by students of cold-blooded vertebrates. Owing to natural conditions, this region is inhabited by a very large number of species, perhaps the largest number in any region of similar size in North America. Unexpectedly heavy rain through the lower Mississippi valley made fish collecting difficult but helped materially in the collecting of frogs and toads. Much assistance was rendered the expedition by Mr. Percy Viosca, Jr., of New Orleans, who has a very intimate knowledge of the country explored. In Texas, the region north and west of Brownsville was studied and a large number of fishes representing most of the fresh-water species of the region were collected. The work in this region was materially aided by the cooperation of Mr. R. D. Camp of Brownsville. The results furnish a basis for much additional knowledge concerning the distribution and relationship of the fishes of the lower Mississippi valley. The specimens collected number 10,000 fishes and 750 reptiles and amphibians.

The final expedition of the year had Central Africa as its field and was despatched late in November. This expedition was organized under the auspices of Captain Marshall Field and Mr. Alfred M. Collins of Philadelphia, a Patron of the Museum. The party consisted of Mr. Collins, assistant curator Heller of the Museum, and Mr. T. Alexander Barns of London. They sailed from England December 5th for the port of Dar-es-Salaam on the east coast of Africa. They plan to push inland at once and work in little known parts of eastern Congo, making general zoological collections and passing northward to return via the Nile during the year 1924. The expedition will attempt to secure specimens of some of the rarer mammals of Central Africa, such as the White Rhino, the Okapi, the Bongo, the Giant Eland, and the Gorilla, any one of which would be of great value to the Museum in supplementing its present collections which are almost wholly from Somaliland and East Africa.

The following list indicates the various expeditions in the field during the year.

| Locality | Collector | Material |
|-----------------------|-----------------|---|
| CHINA | Berthold Laufer | Ethnological Collections Archaeological Collections. |
| MESOPOTAMIA | S. H. Langdon | Archaeological Collections. |
| COLOMBIA | J. Alden Mason | Archaeological Collections. |
| MALAYIA | Pay-Cooper Cole | Ethnological Collections. |



COMMON AND WHITE GYRFALCONS.

TAXIDERM BY ASHLEY HINE.

One eighth natural size.

| | | |
|--|---|-----------------------------------|
| PERU | J. P. MacBride and Dr. George S. Bryan | Herbarium and Economic Specimens. |
| BRAZIL | O. C. Farrington | Gems, Ores and Minerals. |
| PATAGONIA | Elmer S. Riggs J. P. Abbott and G. P. Sternberg | Paleontological Specimens. |
| CHILE, ARGENTINE, AND BRAZIL | W. H. Osgood Boardman Conover | Mammals and Birds. |
| PERU AND BRAZIL | Edmund Heller Mrs. Heller | Mammals. |
| CHILE | C. C. Sanborn | Mammals, Birds and Reptiles. |
| PERU AND BRAZIL | John T. Zimmer | Birds. |
| HONDURAS AND BRITISH HONDURAS | K. P. Schmitt L. L. Walters | Reptiles and Batrachians. |
| LOUISIANA AND TEXAS | A. C. Wood | Fishes and Batrachians. |
| CENTRAL AFRICA | Edmund Heller A. M. Collins T. A. Barns | Mammals. |

INSTALLATION, RE-ARRANGEMENT AND PERMANENT IMPROVEMENT

ANTHROPOLOGY.—Seventy-one new cases were installed during the year in the Department of Anthropology.

Shortly before Christmas 1922, it was decided to open the Egyptian Hall to the public on January 20th. This left four weeks in which to complete the necessary work, placed in charge of Assistant Curator Owen. The nine standard cases previously brought from Ayer Hall required merely readjustment of the material, as displayed upon the shelves, but the 17 special cases containing mummies, in consequence of the plan to enlarge this exhibit, required a regrouping and expansion of the number of mummies into 22 cases. This necessitated the re-installation of 18 of the cases in the mummy group. Eight frames containing papyri and 39 framed mortuary textiles were placed upon the north wall of the hall, as well as 4 large frames containing complete mummy wrappings. A large case of limestone coffin covers was installed in the center of the hall. In the recesses of six pilasters were displayed 13 Mohammedan balcony gratings and colored-glass windows from old houses in Cairo. Two cases of plaster casts of rare portrait statuary, the originals of which are scattered in a number of museums of the Old World, were placed in the recesses of its two pilasters. The mortuary boat of Sesostris III, found in the sands near his pyramid at Dashur by de Morgan in 1894, was re-assembled and placed in a special case. The figures of

four Sekhmets or Lion Goddesses were placed in the west end of the hall. This work accomplished, the hall was opened to the public, in conjunction with the Hall of Oriental Theatricals. Later, three standard cases containing amulets, jewelry, and articles for the toilet, Ushebti figures, glazed and glass ware, tools and weapons and one case of ancient Egyptian weights and Coptic objects of bronze and iron were installed. A case of mummied birds and small mammals, wooden coffin covers and tomb furniture was likewise placed on exhibition. The cut leather corselet of an Egyptian priest is shown in a small case especially built for it. Two Roman wine jars have been installed upon marble bases in the northeast and northwest corners of Stanley Field Hall. The two Roman mills from Bosco Reale, exhibited in Edward E. Ayer Hall, were transferred to a smaller case. Case 23, Stanley Field Hall, containing Indian blankets, was re-installed. In its new organization it is entirely given over to Navaho blankets, all of which were presented by Homer E. Sargent.

The collection of 190 pewter objects presented by Mr. Ayer last January was labeled and installed by the curator in four square cases and two 6-foot wall cases placed in Ayer Hall, the installation of which is thereby completed.

Thirty-seven cases of North American ethnology (Plains, Plateau and Salish tribes) have been installed and placed on exhibition this year by Assistant Curator Linton. This completes the re-installation of Hall 5 and one-half of Hall 4. At the present time Hall 4 contains collections from nearly twenty tribes living in three distinct culture-areas and also the archeological material obtained from the Hopewell group of mounds. In the re-organization planned, the northwest quarter of the hall will be devoted to the Cree, Interior Salish, and other tribes of the Canadian Northwest. The northeastern quarter will be devoted to the Salish tribes of the north Pacific coast, whose culture represents a simple and attenuated form of the Northwest Coast culture illustrated in the eastern end of Hall 3. The southwestern quarter of the hall will be devoted to the eastern woodlands with small exhibits from the southeastern tribes and Iroquois and more extensive exhibits from the Central Algonquian tribes, especially the Sauk and Fox. These collections will illustrate the arts and industries of the semi-sedentary agricultural tribes who occupied the state of Illinois at the time of the colonization. Special stress will be laid upon the features in which these tribes differed from the nomadic tribes of the Plains, whose life is represented in Hall 5. The projected exhibitions should be of great value to teachers of local history, as they are designed to give a correct

picture of the life of the Indians in and about Chicago in the early nineteenth century. The southeastern quarter of the hall will be devoted to the tribes of the Plateau culture area. These tribes had many features in common with those of the Plains area, but differed from them in several details, the most noticeable being their extensive use of basketry.

Twenty cases were installed by Assistant Curator Lewis for exhibition in Joseph N. Field Hall. Seventeen of this number are re-installations, and three cases contain new material.

One of the Chinese screens presented by Mrs. Marshall Field, was removed from Hall 23, which is assigned to contain the Ayer collection of pewter, and was placed on the second floor at the north end of the stairway landing.

Sculptures from India and Java were re-installed by the curator, the two cases being placed in Hall 32.

Six stands holding a map of China and large labels giving chronological tables for the classification of Chinese antiquities have been installed in Hall 24. A new base was made for the case containing the model of the Taj Mahal in Hall 32.

In Hall 9 five cases were changed in order to make a more suitable grouping according to tribes, as well as to gain more space for the Hugao bench. The position of ten cases, including the seal-hunt group, was changed in Mary E. Sturges Hall, to make better aisles, grouping, and lighting, as well as additional space for a four-foot case of Tlingit basketry and a case of Athapascan clothing from the Yukon, which geographically fits in between the Eskimo and Tlingit, but which had been placed temporarily in Hall 4. In Hall 6 one four-foot case containing 13 Hupa storage baskets was emptied and the case transferred to Hall 3 for additional Tlingit baskets. The positions of eighteen cases were shifted, which results in an improved grouping according to tribes.

Three cases were rebuilt for Egyptian mummies. A new case was made for the Egyptian leather corselet. One case was cut down in size for the two Roman mills in Edward E. Ayer Hall. A series of shelves was built at the north end of the fourth floor for storage of archeological material. Store rooms of compressed steel were built at the south end of the fourth floor and are now complete except for the shelving. Additional shelving was built in Room 66 for the storage of collections received from the Captain Marshall Field Expedition to China.

The plaster busts of American Indians were unpacked and arranged on racks in Room 35. The numerous shipments received from the

field made heavy demands on the time of the staff in checking and storing the new acquisitions.

The carved and lacquered Chinese bed, the dragon-boat and the bridal palanquin obtained by the curator in China were assembled and the necessary repairs completed.

A new type of screen for exhibition cases has been devised. It consists of boards of a three-ply veneer, $1\frac{1}{4}$ inches thick, while the old screen was 2 inches thick and proportionately heavy and unwieldy. It required the combined effort of four men to set up this screen, while the new one can easily be handled by a single man. It can be made within two or three days, while it required a week or longer to make one of the old type.

In the modeling section, 93 damaged specimens were repaired, 11 ancient Chinese iron objects treated, 6 papier-maché forms for the installation of costumes were completed and repair work was finished on the miniature group of the Pawnee sacred bundles ceremony. Work was continued on the New Guinea village group, which was largely confined to the making of coconut palms. Seventeen trunks which had to be modeled by hand are now ready. The modeler designed and constructed a machine for making celluloid coconut leaflets; and also made a model and moulds of miniature nuts of 33 sizes. Two trees are practically completed, save for the final coloring of the leaflets.

The Victor X-Ray Corporation of Chicago volunteered its services in taking radiographs of suitable museum objects, and under the direction of Mr. E. C. Jerman, 30 films 14×17 were taken of eight Peruvian and Egyptian mummies of three adult men, birds and small mammals. It is expected that investigations based on these radiographs will yield interesting results and that a study of the condition of the skeletons, as revealed by the radiographs, will excite the curiosity of both the physical anthropologist and the pathologist.

BOTANY.—Early in the year the exhibits in the Department of Botany were rearranged. Wherever possible the bulk of economic plant material was separated from the more purely botanical exhibits, which include the reproductions and models of plants. These will eventually fill the large east hall, on the second floor, known as the Hall of Plant Life. By this change the arrangement of the economic plant material is simplified. Fibres and textiles are now placed together. The food products are grouped, beginning with the small grains, followed by starches, sugars, fats of vegetable origin, chocolate, coffee, tea and spices. Resins and gums, lac and lacquer, wood distillation products,





THE FLOWER- AND FRUIT-BEARING TRUNK OF A CANNON-BALL TREE FROM GUIANA,
A NEW EXHIBIT IN THE HALL OF PLANT LIFE.

One twenty-fourth actual size.

paper making materials and paper pulp products, tanning materials and dye woods, etc., are now also grouped, so that the visitor especially interested in any one of these classes of raw materials, or their products, may find them assembled for comparison, rather than distributed among the plant families to which they botanically belong. The new arrangement is at present in far from perfect order, since the installation in most cases was originally made with a view to a botanical sequence.

The Palms among the larger plant families, alone have been selected for a comprehensive or monographic display, covering both their botanic and economic features. The Museum's collection of palms is now especially rich in both respects and the space required for the rather large specimens is now available. All of the palm material secured by the Stanley Field Guiana Expedition of 1922, named and catalogued, is ready for installation.

In the Hall of Plant Life a decided change in appearance has been effected by painting the interior of cases with a light color. So much is to be said in favor of black as a background for many and varied classes of exhibits, particularly in point of economy and convenience of installation, that its use will be continued in all other halls of the department. However, it proved unsatisfactory as a setting for the reproductions of plants in which a lifelike appearance is desired. The reinstallation of the exhibits in this hall, required by the new plan of arrangement and by the change in background color, has been carried on as rapidly as possible.

The exhibits have been increased by a number of new reproductions and models of plants. The Cycads are now represented by a reproduction of the Comptie (*Zamia floridana*), one of the few Cycads native in the United States. A complete female plant is shown, bearing a ripe fruiting cone. Some models of the seed-bearing leaves of a *Cycas* have been added for purposes of comparison.

For the representation of the adjoining fossil Cycads, a beginning has been made by the reconstruction, in the form of a model, of a fossil Cycad flower. This work has been carried on with the co-operation of Professor Wieland of Yale, the chief investigator of this extinct group. It is intended to illustrate it further, by the reconstruction of a branch of one of the small-leaved tree-like Cycadeoids and by some of the simpler "flowers" of these plants.

The Verbena family has been illustrated by the "Black Mangrove," *Avicennia*, one of the principal members of the Mangrove formation of tropical shores, and biologically perhaps the most interesting of the

plants of its family. An entire young tree with its remarkable clump of breathing roots was dug up, washed free of adhering clay and sent to the Museum by the Stanley Field Guiana Expedition of 1922. The foliage, flowers and fruits have been replaced by reproductions and the tree is now represented as it grew in the Guiana swamp, partly imbedded in mud. Being one of the so-called viviparous plants, its seedlings are of interest and are shown in various stages of growth on the ground below the tree. In the adjoining half of the case may be seen specimens of the peculiar aerial roots of the older trees.

A Cacao or Chocolate tree from Guiana forms another noteworthy accession. The foliage, flower and fruits of this tree also have been restored and the result is a life-like representation of the tree as it grew on a Demerara cacao plantation. A new glass model of an enlarged flower of the Cacao has been added to the present exhibit.

The Gamboge, or "vegetable tallow" family, has been illustrated by a reproduction of a flowering branch of the large-flowered *Clusia*, interesting on account of its showy magnolia-like flowers, and on account of the curious strangling habit of these trees, which has earned for them the appellation "Matapalo" or tree-killers. The *Clusia*, with its thick shining leaves and large white flowers, is undoubtedly one of the handsomest of the flowering branches in the hall. As a further illustration of the fruit-characters in this family of plants, already represented by the Mangosteen, there has been added a fruiting branch of the well-known *Mammea*.

To the Madder family a reproduction of a flowering branch of the East Indian "Silver Leaf" or "Princess Leaf" (*Mussaenda*) has been added. The interesting feature of this is the expansion of one of the calyx lobes of the small orange-red flower, into a large, white, leaf-like structure. In the Trumpet Vine family a reproduction of a fruiting branch of the Calabash tree adds another type of fruit to those already there. A reproduction, from material obtained from Texas, has also been completed of a clump of the common Mistletoe. The Orchid case has been enriched by a reproduction of a plant of the native Pink Lady Slipper (*Cypripedium*). For the exhibit of grasses, an enlarged model has been made of a germinating grain of Wheat. A series of Sweet Pea flowers has been modeled and colored to illustrate latent characters in heredity.

A large part of the work required to restore a flowering and fruiting trunk of a Cannon-ball tree has been performed during the year, and progress has been made on several other reproductions of local and tropical plants.

GEOLOGY.—The Borden collection of Indiana is being installed in Hall 34 as fast as it can be prepared. To make room for this extensive collection, material of the same periods and character but of less exhibition value is removed from the cases and transferred to the study collections. The fronts of four pyramidal cases have now been filled with specimens from this collection.

Fifteen label stands specially designed to secure stability and yet present a neat and unobtrusive appearance, have been provided for the uncased skeletons and other floor mounts in this hall. These stands bring the labels to the height of the eye of the visitor and admit of adjustment to the angle most favorable for reading.

A collection illustrating minerals that can be employed in crystal sets for radio communication was prepared and installed in Skiff Hall.

An attractive addition to the exhibit illustrating the uses of petroleum products is the candle collection. This is installed on a single screen which occupies half of a large case. Placed in the midst of the dull-colored petroleum and coal exhibits it adds a needed touch of color to this part of the hall.

To illustrate the ornamental uses of gypsum, a figure of considerable artistic merit was carved on a small block of alabaster, in such a way as to show both the rough stone and the finished figure.

Work on the model of a cement plant was discontinued for the larger part of the year. The modelling was resumed during the late fall and the model is now complete except for some minor details, painting and some work that can be done only after the model is placed in its exhibition case.

Four series of glass models illustrating the crystal form and colors of gem minerals have been remounted and relabelled. The replicas of famous diamonds in Higinbotham Hall have also received new labels. A tablet of gold nuggets from California, a gift from Mr. William J. Chalmers, has been prepared and is now exhibited in the same Hall.

Further installation was confined to adding new specimens to the present collections and to numerous minor changes in arrangement of material, labels and cases.

A modern still for distilling water has replaced one of antiquated type in the chemical laboratory. This not only provides the water required in the laboratory but also that for the stereopticons in Simpson theatre and for several of the work-rooms. Room 110 has been converted to a preparation room for the Borden collection. In it racks have been erected for all of the departmental storage trays.

Sixty-six additional trays have been provided for the storage of the Borden collection.

In the chemical laboratory the principal work has been confined to the transfer from the original packages to exhibition bottles and jars of several hundred petroleum, greases and waxes, a task that would have been difficult but for the excellent laboratory equipment. A number of problems connected with the maintenance of the building have been solved by laboratory research. These include some fuel investigations, and questions concerning the harmful character of a number of marble cleaning compounds. Identification of minerals received from Museum expeditions has also been carried forward during the year.

Mr. F. C. Richardson of the Geological department of the University of Chicago has made a detailed study of the Museum asbestos collections.

Text for two guide leaflets, one on amber and one on meteorites, were prepared by the Curator and published during the year.

ZOOLOGY.—Preparation of new material for exhibition purposes has steadily advanced and a considerable quantity is on hand, awaiting installation. The animals for the Olympic Elk group, begun some time ago, have been finished to the point of requiring only a few final touches. A case of bears, showing the color variation in the Black Bear group and including specimens of the Black, the Cinnamon, and Glacier Bears is practically ready for exhibition. A similar collection of the larger American cats, as the Cougar, Jaguar, Ocelot, Lynx, Bobcat, etc., is also in an advanced stage. A handsome specimen of the African Leopard was mounted and installed in the hall devoted to the systematic series of mammals; and two small South American monkeys were also mounted for this series. The skin of a hippopotamus, received during the year, was preserved and carefully prepared for mounting.

A collection of American raptorial birds, eagles, hawks and falcons has been prepared, the birds being mounted from fresh material or from thoroughly remodeled specimens and placed on appropriate natural stands instead of the perfunctory T-perches and wooden blocks used heretofore. This collection is designed to occupy an entire case and will be the first of a completely reorganized systematic and geographic exhibit of birds. New descriptive labels have been prepared for each species and a special case label has been devised to fit the case. Progress has been made also in mounting a series of American woodpeckers

and material for other series has been prepared so that it will be available for future work. The exhibit of Birds of Paradise in Stanley Field Hall was improved by the addition of a Blue Bird of Paradise, one of the rarest and most beautiful of its family. The other birds in the case were renovated, and the entire installation modified by the reconstruction of the base.

Preparation of material in the section of reptiles and amphibians advanced rapidly, and notable success has attended the application of the celluloid process to the reproduction of such large reptiles as crocodiles. The eight and a half foot specimen, the first of three for a proposed habitat group of the American Crocodile, sets a new standard for work of this kind and is so life-like as to be almost beyond criticism. A second model of the very different Belize Crocodile, rediscovered by the Museum's expedition to Central America, has also been completed. A large amount of work has been done on the two remaining molds of crocodiles, and these, therefore, can be finished at an early date in 1924. In furtherance of the plan to exhibit a case of the poisonous snakes of North America several molds have been made, of which the most noteworthy are a green, a black-tailed, and a cane-brake rattlesnake.

In the Division of Fishes, one exhibition case was equipped with new labels, and on one side of the screen in this double case a new exhibition was installed, showing some of the fishes of the deeper parts of the sea. Where actual specimens were not available for reproduction, some of the rarer species have been shown by means of colored drawings in natural size, twelve such drawings having been prepared. Specimens of 37 fishes were completely prepared and colored, and 75 others have passed the preliminary stages.

The skeleton of the Sea Elephant was installed in Hall 17 during the month of January. New labels were printed and placed in frames, which were attached to special supports in front of the large skeletons exhibited on open stands. Among these were the skeletons of the Right Whale, Bottle-nose Whale, Walrus, Sea Elephant and Bison.

In the conchological exhibit, the shells in three A-cases were reinstalled and, by the elimination of duplicates, it was possible to condense them into one third the space they formerly occupied. In this manner, two cases became available for the insect exhibit. The work of selecting, naming and remounting a series of North American butterflies for exhibition was advanced as much as possible, with the result that this preparatory work was nearly completed.

THE N. W. HARRIS PUBLIC SCHOOL EXTENSION

The activities of the Department during the year have largely been devoted to the improvement of methods of installation, and to the preparation of material for additional cases. At the end of the year 1923, this Department had 770 cases available for loaning to the schools of Chicago. Several instructive cases of wild flowers growing in the Chicago region were prepared and are now ready for use in the schools. Considerable care was given to the methods of reproducing these flowers, as well as to the means of installing them so that they would be capable of withstanding damage from transporting them to the schools. Realism was added to the cases by the use of enlarged and colored photographs as backgrounds. Besides those cases ready for distribution, several cases are still in various stages of completion. A noteworthy and attractive improvement was made in the cases of several habitat-groups of birds. Instead of placing the enlarged, colored photographs, used as environmental backgrounds, flat against the backs of the cases, they were curved. This curving gives added length to the background and a greater perspective to it.

During the year several conferences were held with groups of principals from the public schools. As a result of these conferences a schedule of deliveries was adopted, which will enable the schools to have uninterrupted, daily use of the cases. The new schedule provides that each school shall receive two cases at the beginning of the school year. These two cases remain in the school for study for three weeks, and are replaced at the end of this period by two other cases. This procedure of distribution and collection, is maintained throughout the school year. This plan has been made possible by the steady increase in the number of cases. Under the abandoned system three cases were left at a school for three weeks' study but it was impossible to substitute others for them when they were collected. In carrying out the new schedule 648 cases are in circulation, an increase of 162 over the previous schedule. There are 326 schools on the schedule to receive cases, 323 of which are public schools.

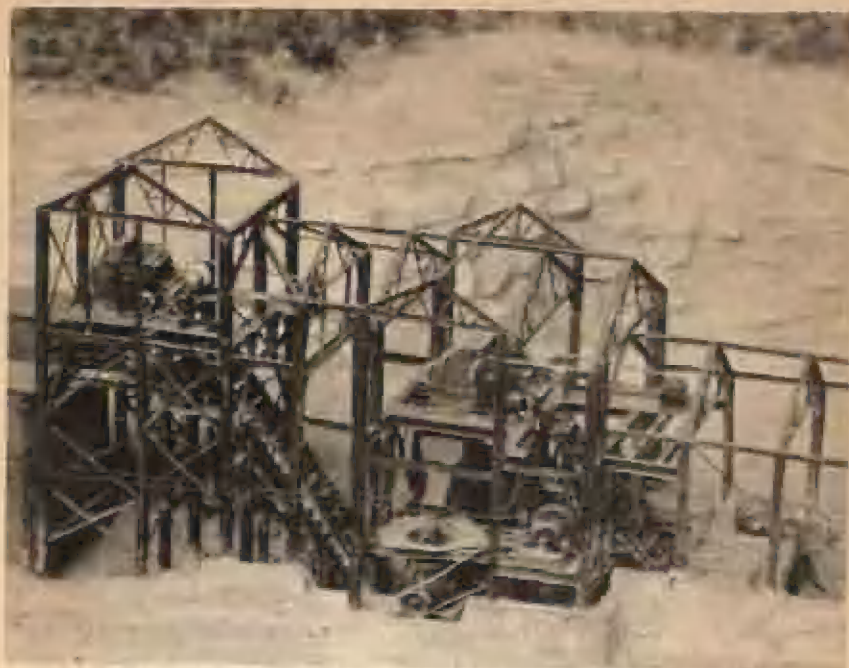
Numerous applications were made for the loan of cases to other than public schools. The Chicago Normal College requested that it be included in the regular schedule. This was done and the student teachers are given special instruction on the educational values of the cases. A similar request was made by the Michael Reese hospital and cases that would be of assistance in certain courses for student nurses were sent. Permission was given the Director of Visual Instruction of the Chicago Public Schools to make lantern slides and stereoscopic



MODEL OF A PLANT FOR THE MANUFACTURE OF PORTLAND CEMENT.

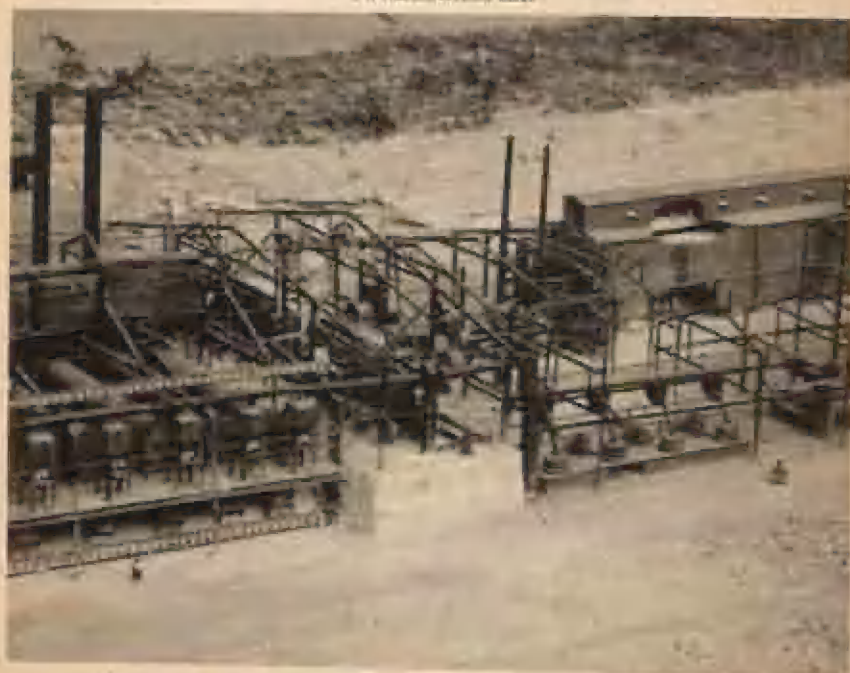
Size, 11 1/2 x 3 1/2 feet.

CONSTRUCTED BY H. W. NICHOLS AND VALERIE LEBEAULT.



DETAIL, (CRUSHER HOUSE), OF MODEL OF A PLANT FOR THE
MANUFACTURE OF PORTLAND CEMENT.

Two fifths actual size.



DETAIL, (RAW GRINDING MILL), OF MODEL OF A PLANT FOR THE
MANUFACTURE OF PORTLAND CEMENT.

One fourth actual size.



pictures of all of the cases of this Department. These slides and pictures will be used in the classrooms in conjunction with the regular study of the cases.

Various institutions throughout the country have commended the work of this Department and requested the loan of cases. The Resources Museum Commission of Missouri asked for several cases to be shown the state legislature, in connection with school exhibits from various institutions. In a letter to the Museum, the Commission wrote, "your cases make by far the most attractive natural history exhibits received."

Eight cases were sent on request to the Peoria County School Teachers' Institute, for exhibition at its regular meeting. Four were sent to Nashville to assist in establishing a children's museum of Natural History. The Louisville Library requested and was granted the loan of a case. The Progressive Educational Association exhibited a case of this Department at its annual meeting held at the Drake Hotel. Two cases were loaned to the San Antonio Museum. The U. S. Department of Agriculture selected sixteen cases and asked that they be sent there for inspection and discussion with the view of adopting similar types of cases for its extension work. While the cases were in Washington several of them were requested by and loaned to public schools there and other cases were loaned to the University of Maryland. Ten cases were on view at the Art Institute as part of the annual exhibition of the Illinois Chapter of the Wild Flowers Preservation Society of America. The Royal Ontario Museum of Zoology requested and received a case for examination. Seventy-five new cases were ordered and received by the Department.

GUIDE-LECTURER.—The chief activities of the guide-lecturer during the past year were centered on the plan to bring the Museum into closer touch with school children and teachers. Through consultation with the teachers, these lectures were closely correlated with the work done in the classroom. The increase in the attendance at these lectures has proven that this work is of practical importance. There were given to school classes 149 lectures, with a total attendance of 5,683 school children. Besides these lectures, the Museum has been the host, through the services of the guide-lecturer, to numerous clubs, conventions, societies and visitors. Over 80 lectures on the Museum exhibits were given to 519 general visitors and 58 lectures were given to clubs and conventions, with an attendance of 2,280. The total number of lecture tours given during the year was increased to 294 and the attendance approximately 9,000.

PUBLICITY.—It had become increasingly evident to the Museum management that the location, visiting hours, and free days, of the Museum were not sufficiently clear and definite in the minds of the public. There were three major causes that had led to this condition. First, the fact that the change from its old location in Jackson Park to its present site in Grant Park was accomplished immediately following the World War, and the public interest was therefore not centered upon this change. Second, the new Museum was built on newly made land, the existence and location of this new park being practically unknown in the outlying districts. Third, the approaches to the Museum were necessarily delayed, awaiting the completion of this outer park. This delay led to a confusion as to the proper approaches to the institution. To give more thorough information to the public concerning the location and approaches, a campaign of public information was started.

The work which was begun in May was confined for the most part to posters indicating the location and approaches to the Museum. These posters are all classed as an indirect type of public notice, since both the name of the Museum and that of the transportation company contributing the advertising space, have appeared on the placards. In placing these direction posters the Museum is greatly indebted to the co-operation of the transportation companies, such as the Surface Lines, Elevated and Suburban Railroad Service. During the year a total of 11,880 posters were distributed to the transportation agencies of which 4,350 were printed outside of the Museum at the expense of these companies, while the remaining 7,530 were printed by the Museum.

During the spring and summer months the correct name and location of the Museum was inserted in the records of six road maps and direction folders. Illustrated folders, which contained information as to location, motor roads, visiting hours, etc., were furnished the Chicago Motor Club and the Illinois Motor Club. Taxi cab companies included the location and history of the Museum in their school instructions to new drivers.

In order to explain the economic value of the Museum exhibits and bring the Museum into a closer contact with the people connected with these economic activities, 12 articles were edited by prominent trade journals, explaining this phase of Museum work. Articles on the exhibits were also published in eight of the house organs of the largest local concerns.

Two news reels were made, Pathe on the Stanley Field plant reproduction process, and International showing the children entering the Museum for one of the fall series of entertainments.

Advance notices were sent to newspapers, public schools, universities, libraries and similar institutions, announcing the fall series of lectures and entertainments.

The newspaper clippings for the year totaled 2,225. There were ten major stories on the expeditions and Museum work. This averaged one article a month that received a good national circulation.

PRINTING.—Since all of the printing is done in the Museum, the output of the section of printing has been greatly increased. The varied interests of the departments call for a large amount of printing of a diversified nature, and the work is now being performed with considerable economy to the Institution and a most satisfying saving of time to the departments. The total number of impressions made indicates the unusually heavy demand on this section. Of the regular series of publications 5,559 copies were printed and bound, and 58,771 leaflets, guides and manuals were printed and bound during the year. The number of labels and other impressions printed follows:

| | Exhibition Labels | Other Impressions |
|--------------------------|----------------------|----------------------|
| Anthropology | 4,777 | 12,600 |
| Botany | 1,041 | 23,737 |
| Geology | 1,480 | 3,015 |
| Zoology | 1,617 | 7,660 |
| Harris Extension | 377 | 908 |
| General | 594 | 260,237 |
| Geographic Society | 714 | 24,400 |
| Total | 9,686 | 332,577 |

Several noteworthy additions were made to the printing equipment during the year. To facilitate the making up of type and illustrated pages, a complete assortment of steel furniture was installed. A most desirable acquisition was a 14 x 22 inch Universal Press with electric motor equipment. A combination cabinet table for ink, rollers and chases for the Universal press, and two large tables for the bindery and for storing temporarily type pages were also provided.

PHOTOGRAPHY AND ILLUSTRATION:—Through the generosity of Mr. George D. Pratt of Brooklyn, N. Y., and Mr. E. A. Mcllhenny of Chicago, who contributed a number of interesting moving picture reels to the Museum, a Moving Picture Film Library was inaugurated. While the work of the Section of Photography has been of a routine nature, the large amount of prints furnished by this section is indicative of the extent of the researches of the museum. The section is fortunate in having an unusually well equipped photographic plant.

The 20,000 lantern slides that were formally distributed among the departments of the museum, have now been brought under one central system of classification and placed in the section of Photography ready for cataloguing. The following tabulation sets forth the work performed in this section during the past year:

| | Number of Lantern Slides Made | Number of Negatives Made | Number of Prints Made | Number of Negatives Developed for Field Expeditions |
|-----------------------|---|-----------------------------------|--------------------------------|---|
| General..... | ... | 43 | 1,893 | ... |
| Anthropology..... | 105 | 331 | 1,346 | ... |
| Botany..... | ... | 132 | 1,873 | ... |
| Geology..... | ... | 66 | 484 | 66 |
| Zoology..... | 403 | 43 | 2,506 | 222 |
| Harris Extension..... | ... | 15 | 249 | 36 |
| Sale..... | 18 | ... | 440 | ... |
| Gift..... | ... | 28 | 165 | ... |
| Totals..... | 526 | 680 | 9,136 | 324 |

PHOTOGRAPHURES.—The great number of publications and leaflets printed during the year has meant also a decided advance in the output of this section. The number of photographures printed during the year for various purposes is condensed into the following table:

| | |
|--------------------------------------|----------------|
| Publications..... | 87,000 |
| Leaflets..... | 159,000 |
| Postal Cards..... | 8,000 |
| Membership Certificate Headings..... | 1,500 |
| Total..... | 255,500 |

ATTENDANCE: It is gratifying to note the increase in attendance during the past year, indicating a steady growth of popular interest in the museum. A total of 496,767 persons visited the museum, of which 414,944 were admitted on the free days, while 81,823 attended on the regular pay days. It is also encouraging to note an increase in the number of school children who have attended the museum during the year.

Herewith are also submitted financial statements, lists of accessions, names of members, etc., etc.

D. C. DAVIES, Director.

ATTENDANCE STATISTICS FROM JANUARY 1, 1923 TO DECEMBER 31, 1923.

| | |
|---|---------|
| Total Attendance..... | 496,767 |
| Paid Attendance..... | 81,823 |
| Free Admissions on Pay Days: | |
| School Children..... | 23,369 |
| Students..... | 13,860 |
| Teachers..... | 1,240 |
| Special..... | 196 |
| Admissions on Free Days: | |
| Thursdays..... | 62,199 |
| Saturdays..... | 101,705 |
| Sundays..... | 212,373 |
| <hr/> | |
| Highest Attendance on any day (October 6, 1923)..... | 8,166 |
| Lowest Attendance on any day (February 14, 1923)..... | 123 |
| Highest Paid Attendance (September 3, 1923)..... | 3,927 |
| Average Daily Admissions..... | 1,361 |
| Average Paid Admissions..... | 439 |
| Guides sold..... | 17,206 |
| Articles checked..... | 15,919 |
| Picture Postal Cards sold..... | 113,437 |

GENERAL FUND

STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS

For the Year Ending December 31, 1923

| | |
|--------------------------------|--------------|
| Balance December 31, 1922..... | \$ 34,673.78 |
|--------------------------------|--------------|

RECEIPTS

| | | |
|--|--------------|---------------------|
| Income—Endowment, General and Door Receipts..... | \$227,897.90 | |
| South Park Commissioners..... | 114,918.71 | |
| Sundry Receipts..... | 11,903.61 | |
| Loans Repaid..... | 29,450.48 | |
| Memberships..... | 14,725.00 | |
| Contributions..... | 180,038.01 | |
| Sale of Securities..... | 139,386.00 | \$718,321.71 |
| | | <u>\$752,995.49</u> |

DISBURSEMENTS

| | | |
|--|---------------------|---------------------|
| Operating Expenses..... | \$332,745.51 | |
| Expeditions..... | 63,335.02 | |
| Collections Purchased..... | 8,159.42 | |
| Furniture and Fixtures..... | 10,884.17 | |
| Expenditures on Building and Approaches..... | 64,286.42 | |
| Securities Purchased..... | 198,333.75 | |
| | <u>\$697,744.29</u> | |
| Transferred to Sinking Funds..... | 9,600.00 | \$707,344.29 |
| Cash Balance December 31, 1923..... | | <u>\$ 45,651.20</u> |

THE N. W. HARRIS PUBLIC SCHOOL EXTENSION

Statement of Income and Expenses for the Year 1923

| | |
|---|------------------|
| Interest and Dividends on Investments..... | \$ 14,884.18 |
| Operating Expenses..... | <u>13,380.86</u> |
| | \$ 1,503.32 |
| Deduction from Income (Depreciation of Automobile Delivery Car).... | <u>602.24</u> |
| Balance transferred to Surplus..... | \$ 901.08 |

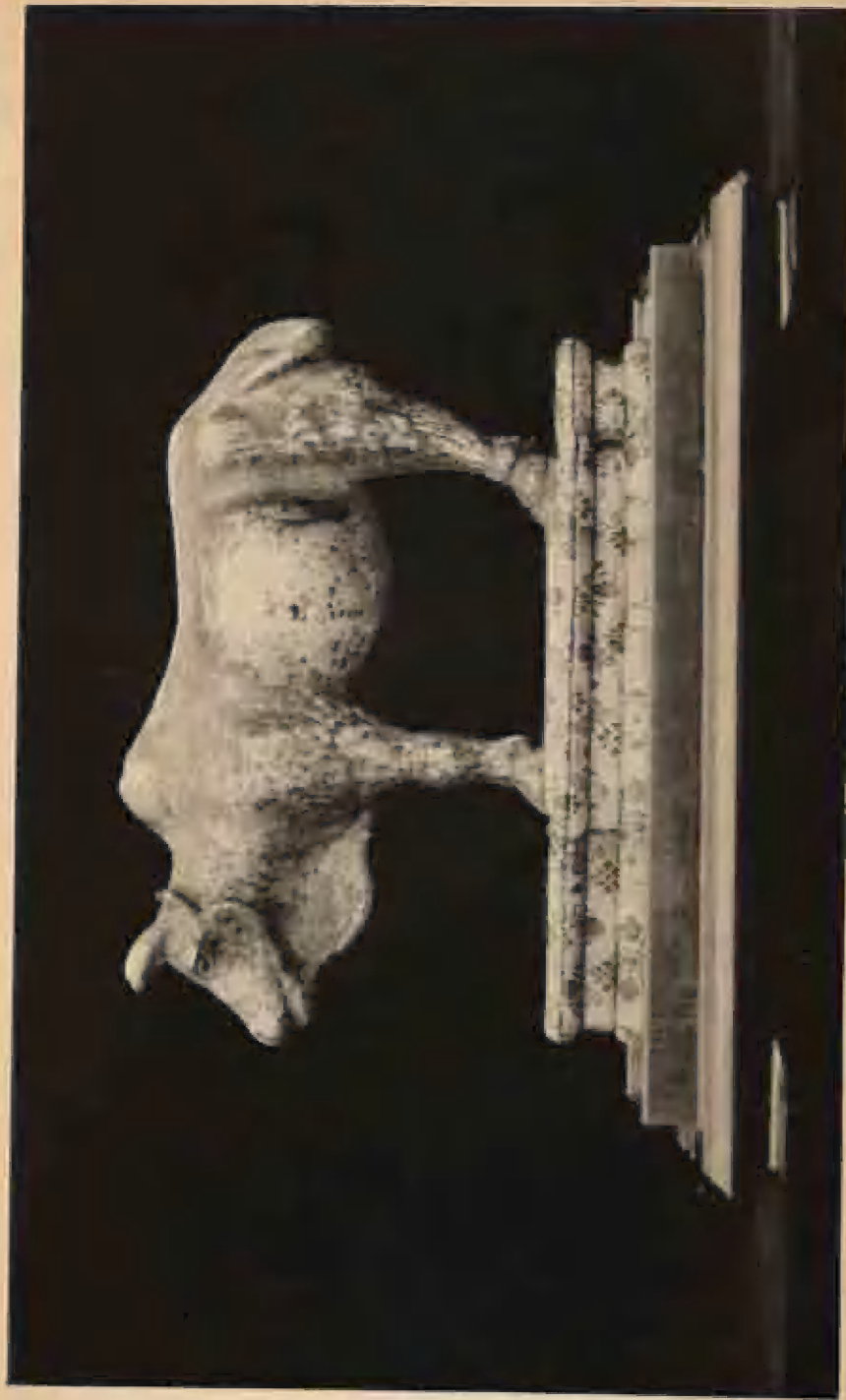


FIGURE OF WATER BUFFALO CAST OF SOLID SILVER, CHINA, SIXTH CENTURY A.D.

CAPT. MARSHALL FIELD EXPEDITION TO CHINA, 1922.

Height 6 inches, length 8 inches.

ACCESSIONS

DEPARTMENT OF ANTHROPOLOGY

ABBOTT, THOMAS R., Peking, China.
1 jade imperial emblem of the Sung period, 1 green-glazed dish of the Ming period, 1 fragmentary bowl of the Yüan period, 1 snuff bottle, 1 Ting bowl of the Sung period, 1 jade ink slab, samples of incense—China (gift).

ALLING, CHARLES, Chicago.
1 color print (surimono) by Kunisada—Japan (gift).

ANDERSEN, MRS. C. M., Chicago.
1 slider-down lined woman's jacket, 1 pair of woman's short sealskin trousers, 1 pair of woman's inner sealskin boots, 1 pair of woman's red outer boots—Eskimo, Good Hope, Greenland (gift).

ARTHUR, J. J., Topeka, Kansas.
2 prehistoric flint scrapers—Morris County, Kansas (gift).

AYER, EDWARD E., Chicago.
190 pewter plates, tankards, jugs, tureens, candlesticks, and other utensils—China, England, Germany, Austria (gift).

4 pewter objects: plate, guild cup, flask, and ewer, of the 18th and 19th centuries—Germany (gift).

11 pewter plates, 1 pewter jug—England and France (gift).

Wrappings of mummy—Egypt (gift).

72 pewter objects—China (gift).

5 pewter objects—Japan (gift).

1 Chinese pewter object, 1 pewter tankard in the shape of round tower with turret—China and Germany (gift).

8 pewter objects: 1 censer, 2 flower vases, 2 candlesticks, 2 teapots, and 1 figure of water buffalo with boy astride—China (gift).

1 Chinese pewter candelabrum, 1 buckskin dance skirt—China and Northwest California (gift).

9 pewter objects: 2 plates, 2 trays, 1 teapot, 4 mugs—Europe (gift).

18 Ushebti figures—Ancient Egypt (gift).

2 pewter bowls and 1 pair of pewter candlesticks—China (gift).

New Year's gift in shape of Twin Genii of Harmony and Union, of pewter—China (gift).

18 pewter objects: teapots, winepots, lamps and figures—China (gift).

BABCOCK, F. R., Nice, France.

3 boomerangs, 2 painted with native red ochre—Central Australia (gift).

BAHR, PETER J., Shanghai, China.

131 objects: 1 brick tea for Mongol market, 1 Ming dynasty paper note, 8 Hien-fung paper notes, 11 bank drafts, 1 chain mail, 5 clay figures, 2 jade boulders, 5 iron implements, 81 bone, bronze and stone implements and beads, 16 small jades of the Han period—China (gift).

BECK, NORMAN, Chicago.

3 painted miniature masks of carved wood—Japan (gift).

BLAIR, WATSON P., Chicago.

Large chipped obsidian blade—Yurok, Weitsapekan, Humboldt County, California (gift).

CHALMERS, W. J., Chicago.

18 bows, arrows, walking sticks—Southwest Congo, Africa.

CLARK, ALBERT B., La Porte, Indiana.

3 baskets, 10 mats, 1 hat, 1 carved ornament, 2 gorgets, 2 shaman's rattles, 3 small masks, 1 small box, 1 paint brush—Queen Charlotte Islands and Northwest Coast (gift).

CORONA MUNDI, New York.

- 30 flint implements of the neolithic period—Lake Pirog, Novgorod District, Russia (exchange).

CORY, MRS. CHARLES B., Chicago.

- 1 bamboo quiver containing blow-gun arrow—Borneo (gift).

DA YUI HENG TOBACCO COMPANY, Shanghai, China.

- 10 samples of tobacco leaves in bundles—Kiangsi and Chekiang Provinces, China (gift).

FIELD, MARSHALL, AND COMPANY, Chicago.

- 4 painted Tientsin clay figures—China (gift).

FIELD MUSEUM OF NATURAL HISTORY.

Collected by B. Lanfer.—Capt. Marshall Field Expedition to China:

- About 2,000 specimens of pottery, jade and other stone carvings, bronze, iron, ivory, paintings, costumes, etc.—China.

Collected by W. H. Osgood.—Capt. Marshall Field South American Expedition:

- 4 prehistoric stone celts and 1 club head, 1 long implement point. Quellon, Chiloe Island, Chile.

Collected by J. T. Zimmer.—Capt. Marshall Field South American Expedition:

- 9 pottery fragments: 6 knob heads, 1 loop handle, and two painted sherds—Huanuco Viejo, Peru.

Collected by Fay-Cooper Cole.—Arthur B. Jones Expedition to Malaysia:

- 2400 objects: clothing, textiles, embroideries, jewelry, brass, silver and wooden bowls and dishes, combs, baskets, bags, weapons, fish traps, agricultural and musical instruments, shadow-play figures, etc.—Federated Malay States, Sumatra, Nias, Java, Borneo.

Purchases:

- 21 specimens of Greek antiquities: 1 marble hand from child's statue, 1 copper hand, 1 glass tear bottle, 3 clay lamps, 1 copper ladle, 1 bronze figure, 1 small painted vase, 7 clay figurines, etc.—Miletos, southwest coast of Asia Minor, from D. G. Peponis, Cincinnati, Ohio.

- 60 samples of Indian textiles mounted in book, dated 1795—North-east Bolivia, South America, from Carlos Doggenweiler, Santiago, Chile.

- 3 decorated ivory arm rings, 1 arm ring of brass wire, 2 daggers worn on lower left arm, 2 pairs of men's sandals, 1 pair of woman's slippers—Upper Nigeria, Africa, from Alexander Inglis, Chicago.

- 1 woman's silk appliqué skirt, 1 woman's silk appliqué shawl, 1 woman's calico waist with silk appliqué, 1 woven yarn bag, 1 woven basswood fiber bag, 1 tomahawk, 2 pairs of woman's leggings, 5 pairs of moccasins—Menomini, Keshena, Wisconsin, from A. Skimmer, Milwaukee, Wisconsin.

- 5 masks of Australian aborigines— from E. Ekbridge, Adelaide, South Australia.

- 1 mountain-sheep wool blanket—Puget Sound, Washington (Coast Salish), from D. Francis, Victoria, B. C.

GOOKIN, F. W. Chicago.

- Set of ten paintings: moral illustrations of the transience of human life—Japan (gift).

GROSSMAN, E. B., Chicago.

- 13 pieces of armor and weapons—India (gift).

HEALY, AUGUSTINE, Chicago.

- Lion mane headdress—Massi, British East Africa (gift).

HEKTOEN, PROFESSOR LUDWIG, Chicago.

- 1 long sword—*katana*—of the 16th century—Japan (gift).

HOLLISTER, FRANKLIN, Chicago.

- 1 stone figure of dark lava rock—Probably Aztec, Mexico City, Mexico (gift).

HOLMQUIST, GUSTAV, Chicago.

- 25 objects: boat models, dishes, pipes, rattles, baskets, hooks, hat, and dagger—Tlingit and Yukon Athabascan, Alaska (gift)

HORNBAKER, W. R., Lakeland, Florida.

- 54 prehistoric flint projectile points and knives—Ripley Township, Montgomery County, Indiana.

- 1 buffalo skull (fragmentary)—from the sands of Saskatchewan River, 12 miles above Edmonton, Canada (gift).

KEEP, CHAUNCEY, Chicago.

- 1 unusually large chipped obsidian blade—Yurok, Weitsapekan, Humboldt County, California (gift).

KWEN VOK-TSOO, Shanghai, China.

- 1 album of photographs showing the actor Mei Lan-fang in different roles, 1 painting of a Peking dog by Tsiao Ping-chen—China (gift).

MATTESON, RICHARD.

- 1 silk cap lined with red felt and trimmed with fur—Korea (gift).

McNUTT, FRED C., Youngstown, Ohio.

- About 225 specimens of pre-Columbian pottery, gourd vessels, wooden vessels and bells, objects of bone, wood and shell, bows, arrows in quivers, pack straps, sandals, turquoise necklace, and 12 copper pieces including an axe, stone-headed club, etc.—Calama, Antofagasta, Chile (gift).

MELCHIOR, J. E., Shanghai, China.

- Prehistoric pottery water-jar—Hankow, China (gift).

MILLER, PAUL, Chicago.

- Prehistoric steatite vessel—50 miles south of Bitter Creek Station, southwest Wyoming (exchange).

PUBLIC MUSEUM OF MILWAUKEE, Milwaukee, Wisconsin.

- 2 Fox medicine bundles, 3 Fox medicine otters, 1 Fox medicine bag of squirrel skin, 1 Fox appliqué woman's skirt—Sauk Indiana, Tama Reservation, Iowa (exchange).

ROBERTS, W. H., Chicago.

- 27 Eskimo objects: bow-drill, knife, sinkers, adze, and ivory carvings—Nome, Alaska (gift).

SARGENT, HOMER E., Pasadena, California.

- 1 Navaho blanket, 1 man's headband, 1 ceremonial headdress—Navaho and Hupa, United States (gift).

- 26 baskets and 1 basket mortar—California, Alaska, and Abyssinia (gift).

SKINNER, A., Milwaukee, Wisconsin.

- 1 Winnebago woman's robe, 3 Iroquois pipes of a late period—Iroquois and Winnebago, New York and Wisconsin (exchange).

STREHLNEEK, E. A., Shanghai, China.

- 7 pottery jars and vases of Han, Tang, and Sung periods, 1 Pandean pipe—China (gift).

UNIVERSITY OF CHICAGO, Chicago.

- 3000 objects Mexican archeology and 400 southwest archeology through M. A. Ryerson, 148 specimens of physical anthropology, 90 casts and reproductions, 35 objects from Swiss Lakes, 70 pieces of Peruvian archeology and ethnology, 6 objects of African ethnology, 80 miscellaneous stone implements, and a few modern Chinese, Japanese, and Korean articles of clothing—Mexico, Southwest United States, Switzerland, Peru, Africa, China, Japan, and Korea (gift).

WANNIECK, L., Paris, France.

- 13 small bronze fragments of the Tsin period (3rd century B. C.), 34 pottery fragments from buried cities of southern Mongolia—China (gift).

WARD, MRS. D. M.

- Modern pottery vase—Pueblo, United States (gift).

DEPARTMENT OF BOTANY

AMERICAN BALSAM CO., Long Island City, New York.

- 1 economic specimen (gift).

BARTHOLOMEW, ELAM, Stockton, Kansas.

- 2 herbarium specimens (gift).

BRITISH MUSEUM OF NATURAL HISTORY, London, England.

- 795 herbarium specimens (exchange).

BRITTON, N. L., New York City.

- 1 herbarium specimen (gift).

- DE SELM, A. W., Kankakee, Illinois.
25 herbarium specimens (gift).
- DREISBACH, ROBERT R., Philadelphia, Pennsylvania.
555 herbarium specimens (exchange).
- FIELD MUSEUM OF NATURAL HISTORY.
Collected by G. S. Bryan—Capt. Marshall Field Peruvian Expedition:
750 cryptogamic specimens.
1500 duplicates for exchange.
Collected by J. P. Macbride—Capt. Marshall Field Peruvian Expedition:
100 economic and exhibition specimens.
3500 dried plants.
15000 duplicates for exchange.
Purchases:
444 herbarium specimens—Capt. Marshall Field 1923 Fund.
2593 herbarium specimens.
1 economic specimen.
Stanley Field Laboratory:
42 models and reproductions of plants.
Stanley Field Guiana Expedition, 1922:
18 economic specimens.
Transfer:
3 economic specimens from Harris Extension.
- FULLER, GEORGE D., University of Chicago.
153 herbarium specimens (gift).
- HEDDLE, JOHN R., Madison, Wisconsin.
218 herbarium specimens (gift).
- HIRSCHY, N. C., Berea, Kentucky.
1 herbarium specimen (gift).
- KAWAGOE, S., Kogoshima, Japan.
1 economic specimen (gift).
- KAWAMURA, S., Tokyo, Japan.
1 economic specimen (gift).
- KING, MISS ANNA, Chicago.
5 herbarium specimens (gift).
- KNOPP, EZRA C., Avalon, Santa Catalina, California.
4 herbarium specimens (gift).
- LA VARRE, W. J. AND LANO, H., New York City.
200 herbarium specimens (gift).
- MERRILL, E. D., Manila, Philippine Islands.
1 herbarium specimen (gift).
- MINER LABORATORIES, Chicago.
1 economic specimen (gift).
- MULFORD AMAZONIAN EXPEDITION, H. H. Rusby, New York City.
135 herbarium specimens (gift).
10 economic specimens (gift).
- NEW YORK BOTANICAL GARDEN, New York City.
62 herbarium specimens (exchange).
- PATTEN, MISS CORA M., Chicago.
84 herbarium specimens (gift).
- PAYSON, E. B., Laramie, Wyoming.
10 herbarium specimens (gift).
- PERRY, GEORGE ELLIOT, Chicago.
1 economic specimen (gift).
- PRAY, LEON L., Chicago.
1 economic specimen (gift).
- REES, NAT. S., Chicago.
1 economic specimen (gift).
- ROOD, MRS. M. R.
12 economic specimens (gift).
- ROYAL BOTANIC GARDENS, Kew, England.
405 herbarium specimens (exchange).
- SCHALLERT, P. O., Winston-Salem, North Carolina.
162 herbarium specimens (exchange).
- SHAPFEE, LOLA M., Chicago.
20 herbarium specimens (gift).
- SHERFF, EARL E., Chicago.
49 herbarium specimens (gift).
- U. S. NATIONAL HERBARIUM, Washington, D. C.
690 herbarium specimens (exchange).
- VISCOSE COMPANY, THE, Marcus Hook, Pennsylvania.
3 economic specimens (gift).
- WEED, ALFRED C., Chicago.
1 economic specimen (gift).
- WILSON, PERCY, New York City.
2 herbarium specimens (gift).
- ZIMMER, JOHN T., Chicago.
1 herbarium specimen (gift).
- ZOBEY, JOSEPH, Chicago.
1 herbarium specimen (gift).

DEPARTMENT OF GEOLOGY

ARMSTRONG, H. M., Grand Junction,
Colorado.

- 3 specimens carnotite—Polar Butte,
Utah (gift).

ASBESTOS CORPORATION OF
CANADA, LTD., Quebec, Can-
ada.

- 6 specimens asbestos and asbestos
product—Quebec, Canada
(gift).

BEBB, DR. WILLIAM, Chicago.

- 12 specimens fossil bird skulls—
La Brea Beds, Hollywood, Cali-
fornia (gift).

BUCKSTAPP, RALPH N., Oshkosh,
Wisconsin.

- 1 specimen iron meteorite—Pitta,
Georgia (gift).

BULF, VALENTINE, Chicago.

- 1 specimen fossil crinoid (gift).

CARD, GEORGE W., Sydney, New
South Wales.

- 1 specimen meteorite—Wariakda,
New South Wales (gift).

CHALMERS, WILLIAM J., Chicago.

- 1 specimen quartz crystal with
chlorite inclusion (gift).
2 specimens silver buttons—Califor-
nia (gift).
4 specimens minerals—California
(gift).
29 specimens gold nuggets and grains
—California (gift).
48 specimens gems and choice min-
erals—South America (gift).

CLARK, WALTER C., Vicksburg,
Mississippi.

- 130 specimens fossils—Mississippi
(exchange).

COLLINS, W. H., Chicago.

- 5 specimens minerals and rocks—
Loughbro, Ontario (gift).

CRAWFORD, MRS. W. L., Dallas,
Texas.

- 1 plastron of fossil turtle—Dallas,
Texas (gift).

DEPARTMENT OF IMMIGRATION,
Pierre, South Dakota.

- 39 specimens minerals and ores
—South Dakota (gift).

DOUGLAS, WAYNE E., Chicago AND
E. F. WALL, JR., Elizabethtown,
Illinois.

- 16 specimens fluorite—Hardin
County, Illinois (gift).

DOWD, QUINCY L., Lombard, Illinois.

- 1 specimen trilobite head—Lombard,
Illinois (gift).

EDE, J. A., La Salle, Illinois.

- 1 specimen tschermigite—Wamsutter,
Wyoming (gift).

EISENDRATH, MRS. D. N., Chicago.

- 82 specimens minerals (gift).

ELLIS, MRS. WALTER C., Sulphur
Rock, Arkansas.

- 4 specimens fossil fish—Sulphur
Rock, Arkansas (gift).

ELWELL, W. J., Danbury, Connecticut.

- 8 specimens minerals—Connecticut
(gift).

FIELD MUSEUM OF NATURAL
HISTORY.

Collected by O. C. Parrington—Capt.
Marshall Field Brazilian Expe-
dition:

- 323 specimens gems, minerals and
ores—Brazil, South America.

Collected by H. W. Nichols:

- 1 specimen tourmaline and quartz
vein—Deloro, Porcupine Dis-
trict, Ontario, Canada.

Collected by C. C. Sanborn—Capt.
Marshall Field Chilean Expe-
dition 1922-23:

- 26 specimens fossils and 4 specimens
conglomerate and sandstone—
Paiguano, Province of Coquim-
ba, Chile, South America.

Purchases:

- 1 specimen troilite—Del Monte
County, California.
1 skull of Hipparion gracile—Isle of
Samos, Greece.
5 individual stone meteorites—Ness
County, Kansas.

FLOWER, W. A., Halfway, Oregon.

- 9 specimens gold and silver ores—
Seven Devils District, Idaho
(gift).

GOURLEY, W. J., Chicago.

- 1 specimen rock weathering—Near
Wauconda, Lake County, Illi-
nois (gift).

- GUNSAULUS, MRS. P. W., Chicago.
1 specimen fossil shell—Gonzales, California (gift).
- HALVORSEN, E. E., Santa Barbara, California.
Collection of invertebrate fossils—San Pedro, California (gift).
- HEIKES, VICTOR C., U. S. Geological Survey, Salt Lake City, Utah.
2 specimens minerals—Manhattan, Nevada (exchange).
2 specimens tillite—Manhattan, Nevada (exchange).
1 specimen microlite—Amelia Court House, Virginia (exchange).
- HORNBAKER, W. R., Lakeland, Florida.
21 specimens fossils—Illinois and Indiana (gift).
- JORDAN, MRS. SCOTT, Chicago.
16 specimens minerals (gift).
32 specimens fossils (gift).
- LEAN, F. J., Calumet, Michigan.
5 specimens minerals—Michigan (gift).
- LINKEY, HARRY, Chicago.
16 specimens minerals—Yellowstone National Park, Wyoming (gift).
- LIVERSIDGE, PROF. A., Surrey, England.
2 casts of Binger meteorite—Australia (gift).
- MORONEY, JOHN J., Chicago.
1 specimen diaspore (gift).
- MUMMS, CHESTER, Arkadelphia, Arkansas.
1 specimen manganese ore—Arkadelphia, Arkansas (gift).
- MURRAY, HUGH, Chicago.
1 specimen septarium—Kibbie, Michigan (gift).
- NEUMANN, MISS PANNYE M., Chicago.
50 specimens minerals—Lake Superior Region and Blue Ridge, North Carolina (gift).
- OFFER, W. C., South Porcupine, Ontario.
1 specimen silver ore—Carmen, near Porcupine, Ontario (gift).
- RICHARDSON, S. A., Bonne Terre, Missouri.
1 limestone drill core—Jefferson County, Illinois (gift).
- ROBB, MRS. GEORGE S., Borden, Indiana.
The Borden Collection of invertebrate paleozoic fossils, approximately 30,000 specimens—Kentucky and Indiana (gift).
- ROOD, MRS. M. R., Milwaukee, Wisconsin.
262 specimens fossils, minerals and ores—mostly north Michigan (gift).
- ROTHSTEIN, H., Denver, Colorado.
1 specimen washegyite—Manhattan, Nevada (gift).
- RUHLING, F. E., Chicago.
1 fossil cephalopod—Omaha, Grand Traverse Bay, Michigan (gift).
- SCHEILER, H. W., Lincoln, Illinois.
1 specimen concretion—Lincoln, Illinois (gift).
15 specimens fossil shells—Lincoln, Illinois (gift).
- SCHMANKE, EMIL C., Chicago.
3 specimens concretion—Cottier, Arkansas (gift).
- SCOTT, G. S., New York City, New York.
1 specimen orpiment and realgar—Manhattan, Nevada (exchange).
- STADLER, RAYMOND, Roberts, Illinois.
1 specimen marcasite concretion—Roberts, Illinois (gift).
- STANDARD OIL COMPANY (INDIANA), Chicago.
86 specimens fancy paraffine candles (gift).
8 specimens fancy paraffine candle holders (gift).
- STANFORD UNIVERSITY, California.
1 slab fossil herring—Lompoc, California (gift).
- STUART, JAMES, San Francisco, California.
1 specimen cinnabar on pyrite (gift).
- THOMAS, R. K., Navajo, Arizona.
Collection of chromium minerals—Apache County, Arizona (gift).
- WOOD, P. E., Sioux City, Iowa.
6 microscopic slides of rocks and minerals (gift).
- WYSCH, ANTHONY J., Chicago.
2 fossil sharks' teeth—District of Arawina, Equatorial Africa (gift).



A CYCAD PLANT WITH ITS LARGE SEED-BEARING CONE.

One tenth actual size.

DEPARTMENT OF ZOOLOGY

AMERICAN MUSEUM OF NATURAL HISTORY, New York City.

378 birds—mainly South American (exchange).

2 birds—San Domingo (exchange).

BOOTH FISHERIES COMPANY, Chicago.

1 pickerel—(gift).

1 wall-eyed pike—(gift).

BRIGHT, J. C., Dubuque, Iowa.

1 fresh-water mussel—Specks Ferry, Iowa (gift).

CAHN, ALVIN R., Urbana, Illinois.

3 grass pike—Fox River, Wisconsin (gift).

CINCINNATI ZOOLOGICAL PARK ASSOCIATION, Cincinnati, Ohio.

1 hippopotamus skin and skeleton—Africa (gift).

COALE, HENRY K., Highland Park, Illinois.

3 birds—New South Wales, Australia (exchange).

COLBURN, FREDERICK S., Chicago.

1 fringe-eared oryx—Tanganyika Colony, Africa (gift).

CONOVER, H. B., Chicago.

1 crested grebe—Krugliner Sea, Germany (gift).

CRIMMINS, COL. M. L., Fort Bliss, Texas.

2 turtles, 5 snakes, 31 lizards—Fort Bliss (gift).

DAHLGREN, DR. B. E., Chicago.

178 dragonflies, ant-lions, mantis, grasshoppers, bugs, flies, beetles, moths, butterflies, bees, wasps—British Guiana (gift).

DOHMEN, U. A., Chicago.

2 butterflies—Chicago (gift).

EDE, GEORGE H., Austin, Illinois.

1 rough-legged hawk—Illinois (gift).

ENGELHARDT, GEORGE P., New York City.

3 tree frogs—Florida (gift).

FIELD MUSEUM OF NATURAL HISTORY.

Collected by F. C. Cole (Arthur B. Jones Malay-Archipelago Expedition):

2 Indian elephant skulls.

Collected by B. E. Dahlgren (Stanley Field Guiana Expedition):

1 agouti—British Guiana.

Collected by W. J. Gerhard:

21 grasshoppers, butterflies, moths, beetles, flies, bees, wasps and parasites—Northern Illinois and Indiana.

Collected by Edmund Heller (Capt. Marshall Field Peruvian Expedition):

58 birds—Brazil.

1741 mammals—Peru and Brazil.

2 beetles, 10 frogs and toads, 21 lizards, 16 snakes, 14 birds—Peru.

Collected by Ashley Hine:

1 moth—Mormon, Illinois.

57 birds—Indiana and Illinois.

Collected by S. E. Meek and S. F. Hildebrand:

290 crustaceans—Panama Canal Zone.

Collected by W. H. Osgood (Capt. Marshall Field Chilean Expedition):

7 insects, 4 shells—Chile and Argentina.

2 snakes, 1 lizard, 10 frogs, 42 birds, 195 mammals—Argentina.

Collected by W. H. Osgood and C. C. Sanborn (Capt. Marshall Field Chilean Expedition):

1 lizard, 11 frogs, 6 bird's eggs and nests, 377 birds, 1047 mammal skins, skulls and skeletons—Chile.

73 fishes—Chile and Argentina.

Collected by W. H. Osgood, C. C. Sanborn, and H. B. Conover (Capt. Marshall Field Chilean Expedition):

23 snakes, 32 lizards, 332 frogs and toads—Chile.

Collected by C. C. Sanborn (Capt. Marshall Field Chilean Expedition):

23 bugs and beetles, 3 snakes, 121 lizards, 151 frogs and toads, 7 bird's eggs and nest, 583 birds, 87 mammals—Chile.

Collected by K. P. Schmidt and W. J. Gerhard:

6 frogs, 7 toads, 3 lizards—Mineral Springs, Indiana.

Collected by K. P. Schmidt and L. L. Walters (Capt. Marshall Field Honduras Expedition):

250 fishes, 1275 amphibians and reptiles, 47 birds—Honduras and British Honduras.

369 leaches, snails, scorpions, centipedes, millipeds, ticks, spiders, dragonflies, roaches, bugs and beetles—Honduras and British Honduras.

Collected by K. P. Schmidt and L. L. Walters:

14 frogs, 72 salamanders—Chicago.

1 lizard, 7 toads, 8 salamanders—Northern Illinois and Northern Indiana.

Collected by Alfred C. Wood (Capt. Marshall Field Louisiana and Texas Expedition):

2000 fishes, 18 salamanders, 290 frogs and toads, 1 turtle, 61 snakes, 83 lizards—Louisiana.

8000 fishes, 302 amphibians and reptiles—Cameron County, Texas.

183 scorpions, centipedes, millipeds, spiders, dragonflies, bugs, beetles, moths and flies—Louisiana and Texas.

Collected by John T. Zimmer (Capt. Marshall Field Peruvian Expedition):

1492 birds, 140 mammal skins and skulls, 16 frogs and toads, 33 lizards, 19 climbing catfish, 2 insects—Peru.

Purchases:

129 birds—Argentina.

1 woodchuck—Arkansas.

44 birds—Austria, Norway, Canary Islands.

14 mammal skins and skulls, 600 dragonflies—Brazil.

4 turtles—Tanganyika Territory, East Africa.

7 birds—Dominican Republic.

203 birds—S. W. Ecuador.

1823 birds—Germany.

110 butterflies and moths—India.

1 lake trout—Michigan.

2 golden eagles—Nebraska.

321 fishes—Marion County, Florida.

2 butterflies, 2 moths—New Guinea.

1 red lynx—

23 birds—Shetland Islands, Cape Verde Islands, Azores.

14 birds—South America.

263 birds—South America and New Guinea.

32 salamanders, 26 frogs, 29 toads,

6 lizards, 48 snakes, 2 turtles—

Mt. Pleasant, S. C.

6 salamanders, 31 toads, 1 lizard, 2 turtles—South Carolina.

30 turtles—Tennessee, Missouri.

10 birds—Uruguay.

300 snakes, lizards, frogs, 2 fishes—various localities.

1 black bear—

1 Pacific wolf fish—

1 red snapper—

1 flounder, 4 mackerels—

1 rattlesnake—Louisiana.

FIELD, STANLEY, Chicago.

1 bronze bust of gorilla by Akeley—(gift).

PREAR, A. EDWARD, Chicago.

6 bear skulls—Alaska (gift).

GUERET, E. N., Chicago.

1 roach—Chicago (gift).

GUILHUPE, F., Chicago.

1 bat—Chicago (gift).

HEALY, AUGUSTINE, Chicago.

1 rhinoceros skull and scalp—British East Africa (gift).

HELLMAYR, DR. C. E., Chicago.

134 butterflies and moths—Colorado (gift).

12 birds—São Paulo, Brazil (gift).

1 wood pewee—Tremont, Indiana (gift).

HEPP, FRANK, Berwick, Ohio.

3 beetles—Berwick, Ohio (gift).

HINE, ASHLEY, Chicago.

1 moth—Chicago (gift).

1 gerfalcon (gift).

HUDSON, DR. J. W., Ukiah, California.

1 photograph of California woodpecker storehouse (gift).

JONES, SARAH V. H., Sydney, Australia.

1 scorpion, 3 centipedes, 6 lizards—Honolulu (gift).

JORDAN, MRS. SCOTT, Chicago.

1 emu egg, 535 star-fish, sea-urchins, corals, shells (gift).

KEISTER, HENRY A., Meredosia, Illinois.

43 sunfishes—Meredosia, Illinois (gift).

KEITH, ELLSWORTH, Hinsdale, Illinois.

1 white-throated sparrow—Hinsdale, Illinois (gift).

KNICKERBOCKER, C. K., Chicago.

- 1 hybrid duck—Lake St. Croix, Wisconsin (gift).
- 2 everglade kites with nest—Palm Beach, Florida (gift).

KRANENBURG, H. J., Ardmore, Illinois.

- 1 spider—North Ardmore, Illinois (gift).

LEOPOLD, N. P., JR., Chicago.

- 1 Cooper's hawk (exchange).

LINCOLN PARK AQUARIUM, Chicago.

- 1 turtle—Havana, Illinois (gift).
- 1 brown trout (gift).
- 5 sunfishes—Lincoln Park Lagoons (gift).
- 2 minnows, 213 sunfishes—Fairport, Iowa (gift).
- 1 axolotl (gift).

LILJEBLAD, E., Chicago.

- 1 butterfly—Canelos, Ecuador (gift).

LINDSAY, ALEXANDER M., JR., Rochester, New York.

- 1 fringe-eared oryx—Tanganyika Colony, Africa (gift).

LINKEY, H., Chicago.

- 1 worm shell—coast of California (gift).

MCCORMICK, COL. ROBERT R., Chicago.

- 1 mounted ruffed bustard—Sahara Desert, Algeria (gift).

MCCREA, W. S., Chicago.

- 7 gizzard shad, Illinois (gift).
- 3 photographs of whale (gift).

MOSS, REV. A. MILES, Para, Brasil.

- 1 dragonfly—Para, Brasil (gift).

NEW YORK CONSERVATION COMMISSION, Albany, New York.

- 1 Chautauque Lake muskallonge—New York (gift).

OLSSON, AXEL, Gloversville, New York.

- 5 lizards, 2 snakes—Piura, Peru (gift).

OTTOFY, DR. LOUIS, Chicago.

- 1 Korean spaniel (gift).

PERRY, MRS. C. N., Chicago.

- 2 shells—off coast of Florida (gift).

PRAY, LEON L., Chicago.

- 1 mud turtle—Hamewood, Illinois (gift).
- 1 hybrid pickerel—Ithaca, New York (gift).

QUEENSLAND MUSEUM, Australia.

- 3 Australian lung-fishes (exchange).

ROTHSCHILD'S DEPT. STORE AQUARIUM, Chicago.

- 117 fishes, 5 amphibians, 2 snakes, 1 lizard, 7 insects (gift).
- 1 small-mouth bass—Sandusky, Ohio (gift).
- 31 salamanders, lizards, turtles, snakes—Florida, Texas, Arizona (gift).
- 1 soft-shelled turtle—Phoenix, Arizona (gift).
- 2 snakes—Florida (gift).

RUDHMAN, MRS. E., Delhi, California.

- 3 sand crickets—Delhi, California (gift).

ST. JOHN'S COLLEGE, Belize, British Honduras.

- 2 centipedes, 4 scorpions, 8 crustaceans, 30 fishes, 103 amphibians and reptiles, 5 mammals, 5 mammal skulls, 6 bird's eggs—British Honduras (gift).

SCHMIDT, F. J. W., Stanley, Wisconsin.

- 1 ring-necked snake—Stanley, Wisconsin (gift).
- 7 snakes, 27 frogs—Clark County, Wisconsin (gift).

SCHMIDT, KARL P., Chicago.

- 1 tree frog—Lakehurst, New Jersey (gift).
- 1 snake, 137 frogs, 475 fishes—Clark County, Wisconsin (gift).
- 1 toad—Monte Cristi, Santo Domingo (gift).
- 3 centipedes—Creston, Louisiana (gift).

SHOLAR, WENCEL, Peru, Illinois.

- 2 red-tailed hawks, Peru, Illinois (gift).

SLAGO, PROF. W. E., Eau Claire, Wisconsin.

- 1 Northern skink—Chippewa Falls, Wisconsin (gift).

SOMMERMEYER, CLIFTON, River Forest, Illinois.

- 1 hornet's nest—River Forest, Illinois (gift).

SOUTHERN BIOLOGICAL SUPPLY COMPANY, New Orleans, Louisiana.

80 fishes—Tammany Parish, Louisiana (gift).

650 fishes—Louisiana and Gulf of Mexico (gift).

TYRRELL, W. B., Chicago.

1 bat—Chicago (gift).

U. S. NATIONAL MUSEUM, Washington, D. C.

1 flounder—Oahu Island, Hawaii (exchange).

WALLER, DR. S. M., San Pedro Sula, Honduras.

3 birds—San Pedro Sula (gift).

WEED, ALFRED C., Chicago.

42 fishes, 15 cricket frogs, 6 tadpoles—New Lenox, Illinois (gift).

367 fishes—Marley, Illinois (gift).

9 mosquitoes, 3 frogs, 1 salamander larva—Chicago, Illinois (gift).

WEED, A. C., SUM, G., AND BICHELE, J., Chicago.

253 fishes—Marley, Illinois (gift).

WICKS, L. A., Chicago.

1 beetle—Waverly Beach, Indiana (gift).

WILLIAMSON, JESSE, H., Bluffton, Indiana.

99 dragonflies—Central and South America (gift).

WISCONSIN CONSERVATION COMMISSION, Madison, Wisconsin.

1 muskallonge—Vilas County, Wisconsin (gift).

WOLCOTT, A. B., Chicago.

1 fly, 3 moths—Chicago (gift).

WYATT, ALEX K., Chicago.

1 fly, Elizabeth, New Jersey (gift).

SECTION OF PHOTOGRAPHY**FIELD MUSEUM OF NATURAL HISTORY.****Made by Section:**

9,156 prints, 1,004 negatives, 526 lantern slides.

Made by F. C. Cole:

99 negatives of Malaysian natives, villages, landscapes.

Made by J. A. Mason:

60 films, negatives of Columbian natives, villages, landscapes.

DE VRY CORPORATION.

4 negatives of Egyptian subjects.

ART INSTITUTE OF CHICAGO.

18 photographs of types of natives of Australia.

18 photographs of types of natives of India.

McILHENNY, E. A., Chicago.

1 moving picture reel.

MILLSPAUGH, DR. C. P.

2 negatives of beetles imbedded in Amber.

PRATT, GEORGE D., Brooklyn, N. Y.

14 moving picture reels.

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Geological Society, Johannesburg.

Institut d'Egypte, Cairo.

Ministry of Public Works, Cairo.

Natal Museum, Pietermaritzburg.

Rhodesia Scientific Society, Bulawayo.

Royal Society of South Africa, Cape Town.

Société de Géographie d'Alger.

Société d'Histoire Naturelle de l'Afrique du Nord, Algeria.

Société des Sciences Naturelles du Maroc.

South African Association for the Advancement of Science, Cape Town.

South African Department of Agriculture, Pretoria.

South African Museum, Cape Town.

Transvaal Museum, Pretoria.

ARGENTINA:

Museo de La Plata.
 Museo Nacional, Buenos Aires.
 Sociedad Ornitológica del Plata,
 Buenos Aires.
 Universidad Nacional, Buenos Aires.

AUSTRALIA:

Australian Museum, Sydney.
 Botanic Gardens and Government
 Domains, Sydney.
 Commonwealth of Australia, Mel-
 bourne.
 Department of Agriculture, Adelaide.
 Department of Agriculture, Sydney.
 Department of Agriculture, Wellington.
 Department of Mines, Brisbane.
 Department of Mines, Sydney.
 Field Naturalists' Club, Melbourne.
 Fish Commission of New South Wales,
 Sydney.
 Forestry Commission, Sydney (gift).
 Geological Survey of Western Aus-
 tralia, Perth.
 Institute of Science and Industry,
 Sydney.
 Linnean Society of New South Wales,
 Sydney.
 Melbourne University.
 National Herbarium, Melbourne.
 Ornithological Society of South Aus-
 tralia, Adelaide.
 Public Library, Museum and Art
 Gallery, Adelaide.
 Public Library, Museum and National
 Gallery of Victoria, Melbourne.
 Queensland Museum, Brisbane.
 Royal Geographical Society of Aus-
 tralia, Brisbane.
 Royal Society of New South Wales,
 Sydney.
 Royal Society of Queensland, Brisbane.
 Royal Society of South Australia,
 Adelaide.
 Royal Society of Tasmania, Hobart.
 Royal Society of Victoria, Melbourne.
 Royal Society of Western Australia,
 Perth.
 South Australian Museum, Adelaide.
 Victoria Department of Agriculture,
 Melbourne.
 Western Australia Geological Survey,
 Perth.

AUSTRIA:

Naturhistorisches Hofmuseum,
 Vienna.
 Naturhistorisches Landesmuseum
 von Kärnten, Klagenfurt.
 Universität, Vienna.
 Zoologisch-Botanische Gesellschaft,
 Vienna.
 Zoologisches Institut, Graz.

BELGIUM:

Académie Royale de Belgique, Brus-
 sels.
 Institut Botanique Léo Errera, Brus-
 sels.
 Jardin Botanique de l'État, Brussels.
 Ministère des Colonies, Brussels.
 Musée Royale d'Histoire Naturelle,
 Brussels.
 Nederlandsche Phytopathologische
 (Plantenziekten) Vereeniging, Ghent.
 Société de Botanique, Brussels.
 Société Royale d'Archéologie, Brus-
 sels.
 Verenigingen Kruidkundig Genoot-
 schap Dodonaea, Ghent.

BRAZIL:

Academia Brasileira de Sciencias,
 Rio de Janeiro.
 Biblioteca Nacional, Rio de Janeiro.
 Escola Superior de Agricultura e
 Medicina, Veterinaria, Rio de
 Janeiro.
 Exposição do Centenario, Rio de
 Janeiro.
 Jardim Botânico, Rio de Janeiro.
 Museu Nacional, Rio de Janeiro.
 Museu Paulista, São Paulo.
 Sociedade Brasileira de Sciencias, Rio
 de Janeiro.

BRITISH GUIANA:

Board of Agriculture, Georgetown.
 Royal Agricultural and Commercial
 Society, Demerara.

CANADA:

Canadian Arctic Expedition, Ottawa
 (gift).
 Chief Game Guardian of Saskatche-
 wan, Regina.
 Department of Agriculture, Ottawa.
 Department of Agriculture, Victoria.
 Department of Mines, Ontario, Tor-
 onto.
 Department of Mines, Ottawa.
 Department of the Interior, Geolog-
 ical Survey, Ottawa.
 Entomological Society of Ontario,
 Toronto.
 Hamilton Association.
 Horticultural Societies, Toronto.
 Minister of Education, Ontario,
 Toronto.
 Provincial Museum, Toronto.
 Provincial Museum, Victoria.
 Royal Canadian Institute, Toronto.
 Royal Society of Canada, Ottawa.
 Société de Géographie, Québec.
 University of Toronto.

CEYLON:

Colombo Museum.

CHILE:

Museo de Etnología y Antropología,
Santiago.
Museo Nacional de Chile, Santiago.

CHINA:

Botany and Forestry Department,
Hong-Kong.
Geological Survey, Peking.
Royal Asiatic Society of North China,
Shanghai.
Science Society of China, Shanghai
(gift).
University of Nanking.

CZECHO-SLOVAKIA:

National Museum Library, Prag.
Societas Entomologica Bohemica,
Prag.
Universita Karlova, Prag.

DENMARK:

Danske Kunstindustrimuseum, Co-
penhagen.
Naturhistorisk Forening, Copenhagen.
Royal Society of Northern Anti-
quaries, Copenhagen.
Société Botanique, Copenhagen.

ECUADOR:

Academia Nacional de Historia, Quito.

FEDERATED MALAY STATES:

Federated Malay States Museum,
Kuala Lumpur.

FIJI ISLANDS:

Fijian Society, Suva.

FINLAND:

Abo Akademi.
Finnish Archaeological Society,
Helsingfors.
Societas pro Fauna et Flora Fennica,
Helsingfors.

FRANCE:

Académie des Sciences, Paris.
Ecole d'Anthropologie, Paris.
Ministère de l'Instruction Publique,
Paris (gift).
Musée Guimet, Paris.
Muséum National d'Histoire Na-
turelle, Paris.
La Nature, Paris.
Société d'Etude des Sciences Na-
turelles, Reims.
Société d'Etudes Scientifiques, Angers.
Société d'Histoire Naturelle, Toulouse.
Société d'Horticulture, Paris.
Société de Géographie, Paris.
Société de Géographie, Toulouse.
Société des Américanistes, Paris.
Société des Sciences Naturelles de
Saône-et-Loire, Chalon-sur-Saône.
Société Géologique du Nord, Lille.

Société Linguistique de Paris.
Société Linnéenne, Bordeaux.
Société Nationale d'Agriculture,
Sciences et Arts, Angers.
Société Nationale d'Horticulture de
France, Paris.
Société Royale des Sciences, Liège.
Société Zoologique, Paris.
Université de Montpellier. Institut de
Zoologie, Cette.
Université de Rennes.

GERMANY:

Bayerische Akademie der Wissen-
schaften, Munich.
Botanischer Garten und Botanisches
Museum, Berlin.
Botanischer Verein der Provinz
Brandenburg, Berlin.
Deutsche Dendrologische Gesellschaft,
Bonn-Poppelsdorf.
Deutsche Gesellschaft für Anthro-
pologie, Ethnologie und Urge-
schichte, Berlin.
Deutsche Morgenländische Gesell-
schaft, Leipzig.
Deutscher Seefischerei Verein, Berlin.
Deutsches Entomologisches Institut,
Berlin.
Geographische Gesellschaft, Hamburg.
Gesellschaft für Erdkunde, Berlin.
Gesellschaft zur Förderung der Ges-
amten Naturwissenschaften, Mar-
burg.
Hamburgische Universität.
K. Museum für Volkskunde, Berlin.
K. Preussische Akademie der Wis-
enschaften, Berlin.
K. Universitäts Bibliothek, Marburg.
K. Universitäts Bibliothek, Munich.
K. Zoologisches Anthropologisch-
Ethnographisches Museum, Dres-
den.
K. Zoologisches Museum, Berlin.
Museum für Völkerkunde, Hamburg.
Museum für Völkerkunde, Leipzig.
Nassauischer Verein für Naturkunde,
Wiesbaden.
Naturforschende Gesellschaft, Frei-
burg.
Naturforschende Gesellschaft, Götting.
Naturhistorische Gesellschaft, Narn-
berg.
Naturwissenschaftliche Gesellschaft,
Dresden.
Naturwissenschaftlicher Verein, Bre-
men.
Naturwissenschaftlicher Verein, Karls-
ruhe.
Naturwissenschaftlicher Verein für
Schleswig-Holstein, Kiel.
Naturwissenschaftlicher Verein für
Steiermark, Graz.

Naturwissenschaftlicher Verein zu
Gera, Gera.
Ornithologische Gesellschaft in Bay-
ern, Munich.
Rheinische Mission-Gesellschaft, Bar-
men.
Schlesische Gesellschaft für Vater-
ländische Cultur, Breslau.
Senckenbergische Naturforschende
Gesellschaft, Frankfurt a-M.
Württembergische Gesellschaft zur
Förderung der Wissenschaften,
Tübingen.
Zoologisches Museum, Hamburg.

GREAT BRITAIN:

Ashmolean Museum, Oxford.
Birmingham Natural History and
Philosophical Society.
Bristol Museum and Gallery.
British Museum, London.
British Museum (Natural History),
London.
Cambridge Antiquarian Society.
Cambridge Philosophical Society.
Cambridge University.
Cardiff Naturalists' Society.
Challenger Society, London.
Dove Marine Laboratory, Cultercoats.
Dumfriesshire and Galloway Natural
History and Antiquarian Society,
Dumfries.
Fisheries Board, Edinburgh.
Geological Society, Edinburgh.
Geological Society, Liverpool.
Great Britain Geological Survey,
London.
Horniman Museum and Library,
London.
Hull Municipal Museum.
Imperial Bureau of Entomology,
London.
Imperial College of Science and Tech-
nology, London.
Japan Society of London.
Lancashire Sea Fisheries Laboratory,
Liverpool.
Linnean Society, London.
Liverpool Biological Society.
London Library.
Manchester Field Naturalists' and
Archaeologists' Society.
Manchester Geographical Society.
Manchester Literary and Philosophi-
cal Society.
Manchester Museum.
Marine Biological Association, Ply-
mouth.
National Library of Wales, Aberyst-
wyth.
National Museum of Wales, Cardiff.

Natural History and Philosophical
Society, Brighton and Hove.
Natural History and Philosophical
Society, Croydon.
Natural History Society, Glasgow.
Natural History Society of North-
umberland, Durham and Newcastle-
on-Tyne, Newcastle.
Oriental Ceramic Society, London.
Royal Anthropological Institute of
Great Britain and Ireland, London.
Royal Botanic Gardens, Edinburgh.
Royal Botanic Gardens, Kew.
Royal Colonial Institute, London.
Royal Geographical Society, London.
Royal Horticultural Society, London.
Royal Scottish Museum, Edinburgh.
Royal Society, London.
Royal Society of Arts, London.
Royal Society of Edinburgh.
South London Entomological and
Natural History Society, London.
Tring Zoological Museum.
Victoria and Albert Museum, London.
Wellcome Chemical Research Labor-
atories, London.
Zoological Society of London.
Zoological Society of Scotland.

HUNGARY:

Hungarian Institute of Ornithology,
Budapest.
Magyar Természettudományi Társu-
lat, Budapest.
Museum Nationale Hungaricum,
Budapest.

INDIA:

Anthropological Society, Bombay.
Archaeological Department, Madras.
Archaeological Survey, Allahabad.
Archaeological Survey, Burma, Ran-
goon.
Archaeological Survey, Calcutta.
Archaeological Survey, Eastern Cir-
cle, Patna.
Archaeological Survey, Frontier Cir-
cle, Peshawar.
Archaeological Survey of Burma,
Lahore.
Asiatic Society of Bengal, Calcutta.
Bihar and Orissa Research Society,
Patna.
Department of Agriculture, Bombay.
Department of Agriculture, Madras.
Department of Agriculture, Poona.
Department of Agriculture, Pusa.
Geological Survey, Calcutta.
Government of India, Calcutta.
Government, Cinchona Plantation,
Calcutta.
Government Museum, Madras.
Indian Museum, Calcutta.

Journal of Indian Botany, Madras.
National Indian Association, Calcutta (gift).

Royal Asiatic Society, North China Branch, Shanghai.

Royal Asiatic Society, Straits Branch, Singapore.

Royal Botanic Garden, Calcutta.

University of Calcutta.

Victoria and Albert Museum, Bombay.

Zoological Survey of India, Calcutta.

IRELAND:

Belfast Naturalists' Field Club.

Department of Agriculture, Scientific Investigations, Dublin.

Geological Survey, Dublin.

National Museum of Science and Art, Dublin.

Natural History and Philosophical Society, Belfast.

Royal Irish Academy, Dublin.

Royal Dublin Society.

ITALY:

Accademia delle Scienze Fisiche e Matematiche, Naples.

Accademia Gioenia di Scienze Naturali, Catania.

Istituto Botanica, Università di Pavia.

Istituto Geografico de Agostini, Novara.

Laboratorio di Zoologia Generale e Agraria, Portici.

Musei Zoologias ed Anatomia Comparata, Turin.

Museo Civico di Storia Naturale, Genoa.

R. Accademia delle Scienze di Torino.

R. Accademia Nazionale dei Lincei, Rome.

R. Orto Botanico Giardino Colonnale, Palermo.

R. Scuola Superiore di Agricoltura, Portici.

R. Società Geografica Italiana, Rome.

Società di Scienze Naturali ed Economiche, Palermo.

Società Geologica Italiana, Rome.

Società Italiana d'Antropologia e Etnologia, Florence.

Società Italiana de Scienze Naturali, Milan.

Società Toscana di Scienze Naturali, Pisa.

JAPAN:

Deutsche Gesellschaft für Natur- und Völkerkunde Ostasiens, Tokyo.

Educational Museum, Tokyo.

Geological Society, Tokyo.

Imperial University, Taihoku.

Imperial University of Tokyo, College of Science.

Ornithological Society, Tokyo.

Tokyo Botanical Society.

JAVA:

Bataviaasch Genootschap van Kunsten en Wetenschappen, Batavia.

Department of Agriculture, Buitenzorg.

Encyclopaedisch Bureau, Weltevreden.

Jardin Botanique, Weltevreden.

Java Instituut, Weltevreden.

K. Natuurkundige Vereeniging in Nederlandsch-Indie, Weltevreden.

MEXICO:

Instituto Geologico de Mexico.

Museo Nacional de Arqueologia, Historia y Etnografia, Mexico.

Secretaria de Agricultura y Fomento.

Direccion de Antropologia, Mexico.

Sociedad Cientifica "Antonio Alzate," Mexico.

Sociedad Geologica Mexicana, Mexico.

NETHERLANDS:

Directie van den Landbouw, Hague.

Koloniaal Instituut, Amsterdam.

K. Akademie van Wetenschappen, Amsterdam.

K. Instituut voor de Taal-Land-en Volkenkunde van Nederlandsch Indie, Hague.

K. Nederlandsch Aardkundig Genootschap, Amsterdam.

Museum voor Land-en Volkenkunde en Maritiem Museum "Prinz Hendrik," Rotterdam.

Nederlandsche Dierkunde Vereeniging, Leiden.

Nederlandsche Phytopathologische Vereeniging, Wageningen.

Rijks Ethnographisch Museum, Leiden.

Rijks Hoogere Land-Tuin-en Boschbouwschool, Wageningen.

Rijks Museum van Natuurlijke Historie, Leiden.

Universiteit van Amsterdam, Bibliothek.

NEW ZEALAND:

Acclimatisation Society, Wellington.

Auckland Institute and Museum, Wellington.

Canterbury Museum, Christchurch.

Department of Agriculture, Wellington.

Department of Mines, Wellington.

Dominion Museum, Wellington.

Geological Survey, Wellington.

New Zealand Board of Science and Art, Wellington.



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- Sociedad Geografica, Lima.

POLAND:

- Musei Polonici Historiae Naturales, Warsaw.
- Société Botanique de Pologne, Warsaw.
- Société Scientifique de Poznan.

PORTUGAL:

- Biblioteca Nacional, Lisbon.
- Collegio de San Piel, Braga.
- Société Portugaise des Sciences Naturelles, Lisbon.

RUSSIA:

- Académie Impériale des Sciences, Petrograd.
- Universität Dorpatensis.

SPAIN:

- Collegio de Pasaje, La Guardia.
- Institució Catalana d'Historia Natural, Barcelona.
- Instituto General y Tecnico, Valencia.
- Junta de Ciencias Naturals, Barcelona.
- Junta para Ampliación de Estudios e Investigaciones Científicas, Madrid.
- R. Academia de Ciencias Exactas, Fisicas y Naturales, Madrid.
- R. Academia de Ciencias y Artes, Barcelona.
- Sociedad Española de Historia Natural, Madrid.

SWEDEN:

- K. Svenska Vetenskapsakademien, Stockholm.
- K. Vetenskaps-och Vitterhets Samhälle, Göteborg.
- K. Vitterhets Historie och Antikvitets Akademien, Stockholm.
- Lunds Universitet.
- Regia Societas Scientiarum Upsalienensis.
- Svenska Sällskapet för Antropologi och Geografi, Stockholm.
- Universitet Biblioteket, Upsala.

SWITZERLAND:

- Botanisches Museum, Zürich.
- Conservatoire et Jardin Botaniques, Geneva.
- Geographisch-Ethnographische Gesellschaft, Zürich.

- Historisches Museum, Bern.
- Naturforschende Gesellschaft, Basel.
- Naturforschende Gesellschaft, Bern.
- Naturforschende Gesellschaft, Zürich.
- Naturhistorisches Museum, Basel.
- Ostschweizerische Geograph-Commerciale Gesellschaft, St. Gallen.
- Société Helvétique des Sciences Naturelles, Bern.
- Société de Physique et d'Histoire Naturelle, Geneva.
- Société Entomologique, Bern.
- Société Fribourgeoise des Sciences Naturelles, Fribourg.
- Société Neuchâteloise de Géographie, Université, Bern.

VENEZUELA:

- Cultura Venezolana, Caracas.

WEST INDIES:

- Academia Nacional de Artes y Letras, Havana.
- Agricultural Experiment Station, Porto Rico.
- Biblioteca Nacional, Havana.
- Department of Agriculture of Jamaica, Kingston.
- Imperial Department of Agriculture, Barbados.
- Trinidad and Tobago Department of Agriculture, Port of Spain.
- Universidad de Habana.

- Ahl, Ernst, Berlin.
- Amalgamated Press, London (gift).
- Berg, Bengt, Stockholm (gift).
- Beyer, Hermann, Mexico (gift).
- Boman, Eric, Buenos Aires (gift).
- Camus, A., Paris (gift).
- Carpenter, G. H., Dublin.
- Charlesworth and Company, Haywards Heath (gift).
- Dunod, H., Paris.
- Faura y Sans, M., Barcelona (gift).
- Fritsch, Karl, Graz.
- Gadeau de Kerville, Henri, Paris (gift).
- Gamner, George F., Mexico (gift).
- Gleerup, C. W. K., Lund.
- Herrera, Alfonso L., Mexico.
- Huard, A., Quebec.
- Janet, Charles, Paris.
- Joyce, T. A., London.
- Koch-Grünberg, Theodor, Stuttgart (gift).
- Laubmann, A., Munich (gift).
- Loesener, T., (gift).
- Loubat, Duc de, Paris.
- MacRitchie, David, Edinburgh.
- Maiden, J. H., Sydney.
- Martelli, Ugolino, Pisa.
- Outes, Felix P., Buenos Aires.

Pittier, Henri, Caracas.
 Ramirez Goyena, Miguel, Managua (gift).
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 Rivet, P., Paris.
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 Stresemann, E., Berlin.
 Weber, Friedrich, Leipzig (gift).
 Widder, Felix J., Graz (gift).
 Wulff, E. A., Heidelberg.
 Zimanyi, Karoly, Budapest.
 Zulueta, Francis de, Oxford (gift).

ALABAMA:

Anthropological Society, Montgomery.
 Department of Conservation, Montgomery.
 Geological Survey, University.

CALIFORNIA:

Agricultural Experiment Station, Berkeley.
 California Academy of Sciences, San Francisco.
 Citrus Experiment Station, Riverside.
 Cooper Ornithological Club, Hollywood.
 Henry E. Huntington Library and Art Gallery, San Gabriel (gift).
 Pomona College, Claremont.
 Scripps Institution of Biological Research, La Jolla.
 Southern California Academy of Sciences, Los Angeles.
 Southwest Museum, Los Angeles.
 Stanford University.
 State Board of Forestry, Sacramento.
 State Mining Bureau, Sacramento.
 University of California, Berkeley.

COLORADO:

Bureau of Mines, Denver.
 Colorado College, Colorado Springs.
 Colorado Museum of Natural History, Denver.
 Colorado Scientific Society, Denver.
 Colorado University, Boulder.
 State Historical and Natural History Society, Denver.

CONNECTICUT:

Agricultural Experiment Station, New Haven.
 American Oriental Society, New Haven.
 Connecticut Academy of Arts and Sciences, New Haven.

Hartford Public Library.
 Peabody Museum, New Haven.
 State Geological and Natural History Survey, Hartford.
 Wesleyan University, Middletown.
 Yale University, New Haven.

GEORGIA:

Central of Georgia Railway, Savannah (gift).
 Geological Survey, Atlanta.

HAWAII:

Agricultural Experiment Station, Honolulu.
 Bernice Pauahi Bishop Museum, Honolulu.
 Board of Commissioners of Agriculture and Forestry, Honolulu.
 Hawaiian Entomological Society, Honolulu.
 Hawaiian Historical Society, Honolulu.

IDAHO:

Mining Industry, Boise.
 State Historical Society of Idaho, Boise.
 University of Idaho, Moscow.

ILLINOIS:

Agricultural Experiment Station, Urbana.
 Art Institute of Chicago.
 Audubon Society, Chicago.
 Augustana College and Theological Seminary, Rock Island.
 Board of Education, Chicago.
 Chicago Historical Society.
 Chicago Public Library.
 Division of Natural History Survey, Urbana.
 Hardwood Record, Chicago (gift).
 John Crerar Library, Chicago.
 Lake Forest College.
 Newberry Library, Chicago.
 Northwestern University, Evanston.
 Open Court Publishing Company, Chicago.
 State Academy of Science, Springfield.
 State Board of Agriculture, Springfield.
 State Geological Survey, Urbana.
 State Historical Library, Springfield.
 State Water Survey, Urbana.
 Superintendent of Public Instruction, Springfield.
 Sweet, Wallach and Company, Chicago (gift).
 University of Chicago.
 University of Illinois, Urbana.
 West Chicago Park Commissioners.

INDIANA:

Academy of Science, Indianapolis.
Department of Conservation, Indianapolis.
Indiana University, Bloomington.
Legislative Reference Bureau, Indianapolis.
Purdue University, Lafayette.
University of Notre Dame.

IOWA:

Academy of Science, Des Moines.
Ames Forestry Club.
Horticultural Society, Des Moines.
Iowa Geological Survey, Des Moines.
Iowa State College, Ames.
University of Iowa, Iowa City.

KANSAS:

Agricultural Experiment Station,
Manhattan.
State Board of Agriculture, Topeka.
State Geological Survey, Lawrence.
University of Kansas, Lawrence.

KENTUCKY:

Agricultural Experiment Station,
Louisville.

LOUISIANA:

Agricultural Experiment Station,
Baton Rouge.
Department of Conservation, New Orleans.

MAINE:

Agricultural Experiment Station,
Orono.
Bowdoin College, Brunswick.
Portland Public Library.

MARYLAND:

Agricultural Experiment Station,
College Park.
Maryland Geological Survey, Baltimore.

MASSACHUSETTS:

Agricultural Experiment Station, Amherst.
American Academy of Arts and Sciences, Boston.
American Antiquarian Society, Worcester.
Bermuda Biological Station, Cambridge.
Boston Public Library.
Boston Society of Natural History.
Harvard College, Museum of Comparative Zoology, Cambridge.
Harvard University. Arnold Arboretum, Jamaica Plain.
Harvard University. Gray Herbarium, Cambridge.

Massachusetts Horticultural Society, Boston.

Museum of Fine Arts, Boston.
New Bedford Free Public Library.
Peabody Institute.
Peabody Museum, Cambridge.
Peabody Museum, Salem.
Phillips Academy, Andover.
Salem Public Library.
Smith College, Northampton.
Springfield City Library Association.
Springfield Natural History Museum.
Tufts College.
Williams College, Williamstown.

MICHIGAN:

Agricultural Experiment Station,
Agricultural College.
Chamberlain Memorial Museum,
Three Oaks.
Detroit Institute of Art.
Geological and Natural History Survey, Lansing.
Grand Rapids Public Library.
Michigan Academy of Science, Ann Arbor.
Michigan College of Mines, Houghton.
Michigan State Library, Lansing.
State Board of Agriculture, Lansing.
State Board of Library Commissions, Lansing.
University of Michigan, Ann Arbor.

MINNESOTA:

Agricultural Experiment Station,
University Farm.
Minneapolis Institute of Arts.
Minnesota Geological Survey, Minneapolis.
Minnesota Historical Society, Saint Paul.
Saint Paul Institute.
State Entomologist, University Farm.
University of Minnesota, Minneapolis.

MISSISSIPPI:

Agricultural Experiment Station,
Agricultural College.

MISSOURI:

Agricultural Experiment Station,
Columbia.
City Art Museum, Saint Louis.
Missouri Botanic Garden, Saint Louis.
Missouri Historical Society, Columbia.
Saint Louis Academy of Science.
Saint Louis Public Library.
Saint Louis University.
University of Missouri. School of Mines, Rolla.
Washington University, Saint Louis.

MONTANA:

University of Montana, Missoula.

NEBRASKA:

University of Nebraska, Lincoln.

NEVADA:

Agricultural Experiment Station,
Reno.

NEW JERSEY:

Agricultural Experiment Station,
Trenton.

Department of Conservation and De-
velopment, Trenton.

Newark Museums Association.
Princeton University.

NEW MEXICO:

New Mexico Museum, Santa Fe.

NEW YORK:

Agricultural Experiment Station,
Geneva.

American Geographical Society, New
York City.

American Museum of Natural History,
New York City.

Asia Publishing Company, New York
City.

Brooklyn Botanic Garden.

Brooklyn Institute of Arts and
Sciences.

Buffalo Society of Natural Sciences.

Carnegie Foundation for the Ad-
vancement of Teaching, New York
City (gift).

Cooper Union for the Advancement of
Science and Art, New York City.

Cornell University, Ithaca.

Forest and Stream Publishing Com-
pany, New York City.

Inter-American Magazine, New York
City (gift).

Japan Society, New York City.

Metropolitan Museum of Art, New
York City.

Museum of the American Indian,
New York City.

New York Academy of Sciences, New
York City.

New York Botanical Garden, New
York City.

New York Historical Society, New
York City.

Pratt Institute Free Library, New
York City.

Public Library, New York City.

Rochester Academy of Science.

Rockefeller Foundation, New York
City.

State College of Forestry, Syracuse.

State Library, Albany.

State Museum, Albany.

Staten Island Institute of Arts and
Sciences, New York City.

Stone Publishing Company, New
York City.

University of the State of New York,
Albany.

Zoological Society, New York City.

NORTH CAROLINA:

Elisha Mitchell Scientific Society,
Chapel Hill.

NORTH DAKOTA:

University of North Dakota, Univer-
sity.

OHIO:

Agricultural Experiment Station,
Wooster.

Cincinnati Museum Association.

Cleveland Museum of Art.

Cleveland Public Library.

Denison University, Granville.

Geological Survey, Columbus.

State Archaeological and Historical
Society, Columbus.

State University, Columbus.

University of Cincinnati.

Wilson Ornithological Club, Oberlin.

OREGON:

Agricultural Experiment Station, Cor-
vallis.

University of Oregon, Eugene.

PENNSYLVANIA:

American Philosophical Society, Phila-
delphia.

Association of Engineering Societies,
Philadelphia.

Bryn Mawr College.

Carnegie Institute, Pittsburgh.

Carnegie Library, Pittsburgh.

Carnegie Museum, Pittsburgh.

Delaware County Institute of Science,
Media.

Dropsie College, Philadelphia.

Engineers' Society of Western Penn-
sylvania, Pittsburgh.

Franklin Institute, Philadelphia.

Numismatic and Antiquarian Society,
Philadelphia.

Pennsylvania Museum and School of
Industrial Art, Philadelphia.

Philadelphia Academy of Natural
Sciences.

Philadelphia College of Pharmacy.

Philadelphia Commercial Museum.

Sullivant Moss Society, Pittsburgh.

University of Pennsylvania, Phila-
delphia.

University of Pennsylvania, Museum,
Philadelphia.

Wagner Free Institute of Science,
Philadelphia.

Wyoming Historical and Geological
Society, Wilkes-Barre.

PHILIPPINE ISLANDS:

Bureau of Education, Manila.
 Department of Agriculture, Manila.
 Department of Agriculture and Natural Resources, Manila.
 Department of Interior, Bureau of Science, Manila.

RHODE ISLAND:

Park Museum, Providence.

SOUTH CAROLINA:

Charleston Museum.

SOUTH DAKOTA:

Agricultural Experiment Station, Brookings.
 Geological and Natural History Survey, Vermillion.

TENNESSEE:

Department of Education. Division of Geology, Nashville.

TEXAS:

Agricultural Experiment Station, College Station.
 Scientific Society of San Antonio.
 University of Texas, Austin.

VERMONT:

Agricultural Experiment Station, Burlington.
 State Forester, Montpelier.

VIRGINIA:

State Library, Richmond.
 University of Virginia, Charlottesville.
 Virginia Geological Survey, Charlottesville.
 Virginia State Forester, Charlottesville.

WASHINGTON:

Department of Conservation and Development. Division of Geology, Olympia.
 Washington Geological Survey, Pullman.
 Washington University, Seattle.
 Washington University, Historical Society, Seattle.

WASHINGTON, D. C.:

American Association for the Advancement of Science (gift).
 American Mining Congress.
 Association for the Study of Negro Life and History.
 Carnegie Institution of Washington (gift).
 Library of Congress.
 National Academy of Sciences.
 National Education Association (gift).
 National Zoological Park.
 Pan American Union.
 Smithsonian Institution.
 United States Government.
 United States National Museum.

WEST VIRGINIA:

State Department of Agriculture, Charleston.
 West Virginia University, Morgantown.

WISCONSIN:

Agricultural Experiment Station, Madison.
 Beloit College.
 Geological and Natural History Survey, Madison.
 Public Museum of Milwaukee.
 State Horticultural Society, Madison.
 University of Wisconsin, Madison.

Allen, Thomas G., Chicago (gift).
 Ames, Oakes, Boston.
 Ayer, Edward E., Chicago (gift).
 Bailey, L. H., Ithaca.
 Baker, Frank C., Urbana.
 Blatchley, W. S., Indianapolis.
 Breman, George A., Chicago (gift).
 Britton, Elizabeth G., New York City (gift).
 Chalmers, W. J., Chicago (gift).
 Cockerell, T. D. A., Boulder.
 Cook, Melville T., Rio Piedras.
 Davies, D. C., Chicago (gift).
 Davis, William T., New Brighton (gift).
 Dixon, Roland B., Cambridge.
 Edgerton, William F., Chicago (gift).
 Engelmann, W. P., Chicago (gift).
 Evans, Alexander W., New Haven.
 Farwell, Oliver A., Detroit (gift).
 Field, Stanley, Chicago (gift).
 Gault, B. T., Glen Ellyn.
 Gerhard, W. J., Chicago (gift).
 Goldamer, William E., Chicago (gift).
 Greenman, Jesse M., Saint Louis (gift).
 Gunsaulus, Helen C., Chicago (gift).
 Holzinger, J. M., Winona (gift).
 Lewis, A. B., Chicago.
 McCormick, L. Hamilton, Chicago (gift).
 MacCurly, George Grant, New Haven.
 Macfarlane, J. M., Philadelphia (gift).
 Meyers, George S., Jersey City (gift).
 Millsbaugh, C. P., Chicago.
 Millsbaugh, Mrs. C. P., Chicago (gift).
 Osborn, Henry T., New York City.
 Payne, John Barton, Chicago (gift).
 Penrose, R. A. F., Philadelphia (gift).
 Ramey, Fred, East Saint Louis.
 Robb, Mrs. George W., Borden (gift).
 Schaffner, John P., Columbus (gift).
 Springer, Frank, Las Vegas.
 Strong, R. M., Chicago.
 Todd, W. E. C., Pittsburgh.
 Trelease, William, Urbana.
 Weed, Alfred C., Chicago (gift).
 Weiss, Harry B., New Jersey.
 Weld, Lewis H., Washington (gift).
 Wolcott, A. B., Chicago (gift).

ARTICLES OF INCORPORATION

STATE OF ILLINOIS

DEPARTMENT OF STATE

WILLIAM H. HINRICHSEN, *Secretary of State.*

TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETING:

Whereas, a Certificate duly signed and acknowledged having been filed in the office of the Secretary of State, on the 16th day of September, A. D. 1893, for the organization of the COLUMBIAN MUSEUM OF CHICAGO, under and in accordance with the provisions of "An Act Concerning Corporations," approved April 18, 1872, and in force July 1, 1872, and all acts amendatory thereof, a copy of which certificate is hereto attached.

Now, therefore, I, William H. Hinrichsen, Secretary of State of the State of Illinois, by virtue of the powers and duties vested in me by law, do hereby certify that the said COLUMBIAN MUSEUM OF CHICAGO is a legally organized Corporation under the laws of this State.

In Testimony Whereof, I hereto set my hand and cause to be affixed the Great Seal of State. Done at the City of Springfield, this 16th day of September, in the year of our Lord one thousand eight hundred and ninety-three, and of the Independence of the United States the one hundred and eighteenth.

W. H. HINRICHSEN,

{SEAL}

Secretary of State.

TO HON. WILLIAM H. HINRICHSEN,

SECRETARY OF STATE:

SIR:

We, the undersigned citizens of the United States, propose to form a corporation under an act of the General Assembly of the State of Illinois, entitled "An Act Concerning Corporations," approved April 18, 1872, and all acts amendatory thereof; and that for the purposes of such organization we hereby state as follows, to-wit:

1. The name of such corporation is the "COLUMBIAN MUSEUM OF CHICAGO."

2. The object for which it is formed is for the accumulation and dissemination of knowledge, and the preservation and exhibition of objects illustrating Art, Archaeology, Science and History.

3. The management of the aforesaid museum shall be vested in a Board of FIFTEEN (15) TRUSTEES, five of whom are to be elected every year.

4. The following named persons are hereby selected as the Trustees for the first year of its corporate existence:

Edward E. Ayer, Charles B. Farwell, George E. Adams, George R. Davis, Charles L. Hutchinson, Daniel H. Burnham, John A. Roche, M. C. Bullock, Emil G. Hirsch, James W. Ellsworth, Allison V. Armour, O. F. Aldis, Edwin Walker, John C. Black and Frank W. Gunsaulus.

5. The location of the Museum is in the City of Chicago, County of Cook, and State of Illinois.

(Signed),

George E. Adams, C. B. Farwell, Sidney C. Eastman, F. W. Putnam, Robert McCurdy, Andrew Peterson, L. J. Gage, Charles L. Hutchinson, Ebenezer Buckingham, Andrew McNally, Edward E. Ayer, John M. Clark, Herman H. Kohlsaat, George Schneider, Henry H. Getty, William R. Harper, Franklin H. Head, E. G. Keith, J. Irving Pearce, Axel F. Hatch, Henry Wade Rogers, Thomas B. Bryan, L. Z. Leiter, A. C. Bartlett, A. A. Sprague, A. C. McClurg, James W. Scott, Geo. F. Bissell, John R. Walsh, Chas. Fitzsimmons, John A. Roche, E. B. McCagg, Owen F. Aldis, Ferdinand W. Peck, James H. Dole, Joseph Stockton, Edward B. Butler, John McConnell, R. A. Waller, H. C. Chatfield-Taylor, A. Crawford, Wm. Sooy Smith, P. S. Peterson, John C. Black, Jno. J. Mitchell, C. F. Gunther, George R. Davis, Stephen A. Forbes, Robert W. Patterson, Jr., M. C. Bullock, Edwin Walker, George M. Pullman, William E. Curtis, James W. Ellsworth, William E. Hale, Wm. T. Baker, Martin A. Ryerson, Huntington W. Jackson, N. B. Ream, Norman Williams, Melville E. Stone, Bryan Lathrop, Eliphalet W. Blatchford, Philip D. Armour.

STATE OF ILLINOIS }
COOK COUNTY } ss.

I, G. R. MITCHELL, a NOTARY PUBLIC in and for said County, do hereby certify that the foregoing petitioners personally appeared before me and acknowledged severally that they signed the foregoing petition as their free and voluntary act for the uses and purposes therein set forth.

Given under my hand and notarial seal this 14th day of September, 1893.

G. R. MITCHELL,

[SEAL]

NOTARY PUBLIC, COOK COUNTY, ILL.

CHANGE OF NAME.

Pursuant to a resolution passed at a meeting of the corporate members held the 25th day of June, 1894, the name of the COLUMBIAN MUSEUM was changed to FIELD COLUMBIAN MUSEUM. A certificate to this effect was filed June 26, 1894, in the office of the Secretary of State for Illinois.

CHANGE OF NAME.

Pursuant to a resolution passed at a meeting of the corporate members held the 8th day of November, 1905, the name of the FIELD COLUMBIAN MUSEUM was changed to FIELD MUSEUM OF NATURAL HISTORY. A certificate to this effect was filed November 10, 1905, in the office of the Secretary of State for Illinois.

CHANGE IN ARTICLE 3.

Pursuant to a resolution at a meeting of the corporate members held the 10th day of May, 1920, the management of FIELD MUSEUM OF NATURAL HISTORY shall be invested in a Board of TWENTY-ONE (21) TRUSTEES, who shall be elected in such manner and for such time and term of office as may be provided for by the By-Laws. A certificate to this effect was filed May 21, 1920, in the office of the Secretary of State for Illinois.

AMENDED BY-LAWS

APRIL 16, 1923

ARTICLE 1.

MEMBERS

SECTION 1. Members shall be of seven classes, Corporate Members, Honorary Members, Patrons, Life Members, Associate Members, Sustaining Members, and Annual Members.

SECTION 2. The Corporate Members shall consist of the persons named in the articles of incorporation, and of such other persons as shall be chosen from time to time by the Board of Trustees at any of its meetings, upon the recommendation of the Executive Committee; provided, that such person named in the articles of incorporation shall, within ninety days from the adoption of these By-Laws, and persons hereafter chosen as Corporate Members shall, within ninety days of their election, pay into the treasury the sum of twenty (\$20.00) dollars or more. Corporate Members becoming Life Members, Patrons or Honorary Members shall be exempt from dues. Annual meetings of said Corporate Members shall be held at the same place and on the same day that the annual meeting of the Board of Trustees is held.

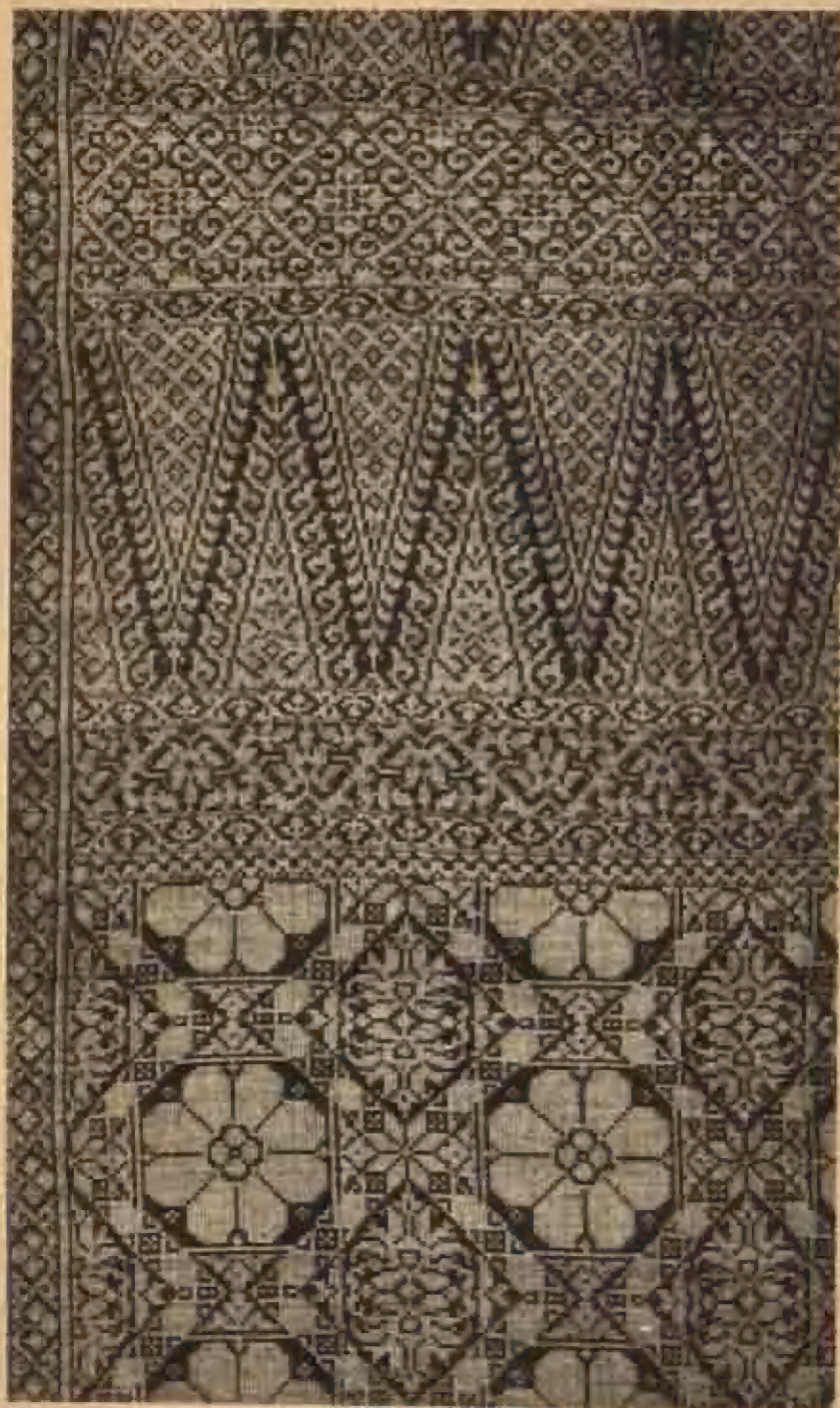
SECTION 3. Honorary Members shall be chosen by the Board from among persons who have rendered eminent service to science, and only upon unanimous nomination of the Executive Committee. They shall be exempt from all dues.

SECTION 4. Patrons shall be chosen by the Board upon recommendation of the Executive Committee from among persons who have rendered eminent service to the Museum. They shall be exempt from all dues, and, by virtue of their election as Patrons, shall also be Corporate Members.

SECTION 5. Any person paying into the treasury the sum of five hundred (\$500.00) dollars, at any one time, shall, upon the unanimous vote of the Board, become a Life Member. Life Members shall be exempt from all dues, and shall enjoy all the privileges and courtesies of the Museum that are accorded to members of the Board of Trustees.

SECTION 6. Any person paying into the treasury of the Museum the sum of one hundred (\$100.00) dollars, at any one time, shall upon the unanimous vote of the Board, become an Associate Member. Associate Members shall be entitled to: tickets admitting member and members of family, including non-resident home guests; all publications of the Museum, if so desired; reserved seats to all lectures and entertainments under the auspices of the Museum, provided reservation is requested in advance; and admission of holder of membership and accompanying party to all special exhibits and Museum functions day or evening.

SECTION 7. Sustaining Members shall consist of such persons as are selected from time to time by the Board of Trustees at any of its meetings, and who shall pay an annual fee of twenty-five (\$25.00) dollars, payable within thirty days after notice of election and within thirty days after each recurring annual date. This Sustaining Membership entitles the member to free admission for the member and family to Museum on any day and allows 25 admission coupons,



ROYAL SARONG OR SKIRT WOVEN IN GOLD THREADS, PERAK MALAY
ARTHUR B. JONES EXPEDITION TO MALAYSIA 1922-23.

58 x 36 inches.

which may be used by any one, the Annual Report and such other Museum documents or publications as may be requested in writing. When a Sustaining Member has paid the annual fee of \$25.00 for six years, such member shall be entitled to become an Associate Member.

SECTION 8. Annual Members shall consist of such persons as are selected from time to time by the Board of Trustees at any of its meetings, and who shall pay an annual fee of ten (\$10.00) dollars, payable within thirty days after each recurring annual date. An Annual Membership shall entitle the member to a card of admission for the member and family during all hours when the Museum is open to the public, and free admission for the member and family to all Museum lectures or entertainments. This membership will also entitle the holder to the courtesies of the membership privileges of every Museum of note in the United States and Canada, so long as the existing system of cooperative interchange of membership tickets shall be maintained, including tickets for any lectures given under the auspices of any of the Museums during a visit to the cities in which the cooperative museums are located.

ARTICLE II

BOARD OF TRUSTEES

SECTION 1. The Board of Trustees shall consist of twenty-one members. The respective members of the Board now in office, and those who shall hereafter be elected, shall hold office during life. Vacancies occurring in the Board shall be filled at a regular meeting of the Board, upon the nomination of the Executive Committee made at a preceding regular meeting of the Board, by a majority vote of the members of the Board present.

SECTION 2. Regular meetings of the Board shall be held monthly. Special meetings may be called at any time by the President, and shall be called by the Secretary upon the written request of three Trustees. Five Trustees shall constitute a quorum, except for the election of officers or the adoption of the Annual Budget, when seven Trustees shall be required, but meetings may be adjourned by any less number from day to day, or to a day fixed, previous to the next regular meeting.

SECTION 3. Reasonable written notice designating the time and place of holding meetings, shall be given by the Secretary.

ARTICLE III

HONORARY TRUSTEES

SECTION 1. As a mark of respect, and in appreciation of services performed for the Institution, those Trustees who by reason of inability, on account of change of residence, or for other cause or from indisposition to serve longer in such capacity shall resign their place upon the Board, may be elected, by a majority of those present at any regular meeting of the Board, an Honorary Trustee for life. Such Honorary Trustee will receive notice of all meetings of the Board of Trustees, whether regular or special, and will be expected to be present at all such meetings and participate in the deliberations thereof, but an Honorary Trustee shall not have the right to vote.

ARTICLE IV.

OFFICERS

SECTION 1. The officers shall be a President, a First Vice-President, a Second Vice-President, a Third Vice-President, a Secretary, an Assistant Secretary and a Treasurer. They shall be chosen by ballot by the Board of Trustees, a majority of those present and voting being necessary to elect. The President,

the First Vice-President, the Second Vice-President, and the Third Vice-President shall be chosen from among the members of the Board of Trustees. The meeting for the election of officers shall be held on the third Monday of January of each year, and shall be called the Annual Meeting.

SECTION 2. The officers shall hold office for one year, or until their successors are elected and qualified, but any officer may be removed at any regular meeting of the Board of Trustees by a vote of two-thirds of all the members of the Board. Vacancies in any office may be filled by the Board at any meeting.

SECTION 3. The officers shall perform such duties as ordinarily appertain to their respective offices, and such as shall be prescribed by the By-Laws, or designated from time to time by the Board of Trustees.

ARTICLE V.

THE TREASURER

SECTION 1. The Treasurer shall be custodian of the funds of the Corporation except as hereinafter provided. He shall make disbursements only upon warrants drawn by the Director and countersigned by the President. In the absence or inability of the Director, warrants may be signed by the Chairman of the Finance Committee, and in the absence or inability of the President, may be countersigned by one of the Vice-Presidents, or any member of the Finance Committee.

SECTION 2. The securities and muniments of title belonging to the corporation shall be placed in the custody of some Trust Company of Chicago to be designated by the Board of Trustees, which Trust Company shall collect the income and principal of said securities as the same become due, and pay same to the Treasurer, except as hereinafter provided. Said Trust Company shall allow access to and deliver any or all securities or muniments of title to the joint order of the following officers, namely The President or one of the Vice-Presidents, jointly with the Chairman, or one of the Vice-Chairmen, of the Finance Committee of the Museum.

SECTION 3. The Treasurer shall give bond in such amount, and with such sureties as shall be approved by the Board of Trustees.

SECTION 4. The Harris Trust & Savings Bank of Chicago shall be Custodian of "The N. W. Harris Public School Extension of Field Museum" fund. The bank shall make disbursements only upon warrants drawn by the Director and countersigned by the President. In the absence or inability of the Director, warrants may be signed by the Chairman of the Finance Committee, and in the absence or inability of the President, may be countersigned by one of the Vice-Presidents, or any member of the Finance Committee.

ARTICLE VI.

THE DIRECTOR

SECTION 1. The Board of Trustees shall elect a Director of the Museum, who shall remain in office until his successor shall be elected. He shall have immediate charge and supervision of the Museum, and shall control the operations of the Institution, subject to the authority of the Board of Trustees and its Committees. The Director shall be the official medium of communication between the Board, or its Committees, and the scientific staff and maintenance force.

SECTION 2. There shall be four scientific departments of the Museum—Anthropology, Botany, Geology and Zoology; each under the charge of a Curator, subject to the authority of the Director. The Curators shall be appointed by the Board upon the recommendation of the Director, and shall serve during the pleasure of the Board. Subordinate staff officers in the

scientific departments shall be appointed and removed by the Director upon the recommendation of the Curators of the respective Departments. The Director shall have authority to employ and remove all other employees of the Museum.

SECTION 3. The Director shall make report to the Board at each regular meeting, recounting the operations of the Museum for the previous month. At the Annual Meeting, the Director shall make an Annual Report, reviewing the work for the previous year, which Annual Report shall be published in pamphlet form for the information of the Trustees and Members, and for free distribution in such number as the Board may direct.

ARTICLE VII.

AUDITOR

SECTION 1. The Board shall appoint an Auditor, who shall hold his office during the pleasure of the Board. He shall keep proper books of account, setting forth the financial condition and transactions of the Corporation, and of the Museum, and report thereon at each regular meeting, and at such other times as may be required by the Board. He shall certify to the correctness of all bills rendered for the expenditure of the money of the Corporation.

ARTICLE VIII.

COMMITTEES

SECTION 1. There shall be five Committees, as follows: Finance, Building, Auditing, Pension and Executive.

SECTION 2. The Finance Committee shall consist of five members, the Auditing and Pension Committees shall each consist of three members, and the Building Committee shall consist of five members. All members of these four Committees shall be elected by ballot by the Board at the Annual Meeting, and shall hold office for one year, and until their successors are elected and qualified. In electing the members of these Committees, the Board shall designate the Chairman and Vice-Chairman by the order in which the members are named in the respective Committee; the first member named shall be Chairman, the second named the Vice-Chairman, and the third named, Second Vice-chairman, succession to the Chairmanship being in this order in the event of the absence or disability of the Chairman.

SECTION 3. The Executive Committee shall consist of the President of the Board, the Chairman of the Finance Committee, the Chairman of the Building Committee, the Chairman of the Auditing Committee, the Chairman of the Pension Committee, and three other members of the Board to be elected by ballot at the Annual Meeting.

SECTION 4. Four members shall constitute a quorum of the Executive Committee, and in all standing Committees two members shall constitute a quorum. In the event that, owing to the absence or inability of members, a quorum of the regularly elected members cannot be present at any meeting of any Committee, then the Chairman thereof, or his successor, as herein provided, may summon any members of the Board of Trustees to act in place of the absentee.

SECTION 5. The Finance Committee shall have supervision of investing the endowment and other permanent funds of the Corporation, and the care of such real estate as may become its property. It shall have authority to invest, sell, and reinvest funds, subject to the approval of the Board.

SECTION 6. The Building Committee shall have supervision of the construction, reconstruction, and extension of any and all buildings used for Museum purposes.

SECTION 7. The Executive Committee shall be called together from time to time as the Chairman may consider necessary, or as he may be requested to do by three members of the Committee, to act upon such matters affecting the administration of the Museum as cannot await consideration at the Regular Monthly Meetings of the Board of Trustees. It shall, before the beginning of each fiscal year, prepare and submit to the Board an itemized Budget, setting forth the probable receipts from all sources for the ensuing year, and make recommendations as to the expenditures which should be made for routine maintenance and fixed charges. Upon the adoption of the Budget by the Board, the expenditures as stated are authorized.

SECTION 8. The Auditing Committee shall have supervision over all accounting and bookkeeping, and full control of the financial records. It shall cause the same, once each year, or oftener, to be examined by an expert individual or firm, and shall transmit the report of such expert individual or firm to the Board at the next ensuing regular meeting after such examination shall have taken place.

SECTION 9. The Pension Committee shall determine by such means and processes as shall be established by the Board of Trustees to whom and in what amount the Pension Fund shall be distributed. These determinations or findings shall be subject to the approval of the Board of Trustees.

SECTION 10. The Chairman of each Committee shall report the acts and proceedings thereof at the next ensuing regular meeting of the Board.

SECTION 11. The President shall be ex-officio a member of all Committees and Chairman of the Executive Committee. Vacancies occurring in any Committee may be filled by ballot at any regular meeting of the Board.

ARTICLE IX.

NOMINATING COMMITTEE

SECTION 1. At the November meeting of the Board each year, a Nominating Committee of three shall be chosen by lot. Said Committee shall make nominations for membership of the Finance Committee, the Building Committee, the Auditing Committee, and the Pension Committee, and for three members of the Executive Committee, from among the Trustees, to be submitted at the ensuing December meeting and voted upon at the following Annual Meeting in January.

ARTICLE X.

SECTION 1. Whenever the word "Museum" is employed in the By-Laws of the Corporation, it shall be taken to mean the building in which the Museum as an Institution is located and operated, the material exhibited, the material in study collections, or in storage, furniture, fixtures, cases, tools, records, books, and all appurtenances of the Institution and the workings, researches, installations, expenditures, field work, laboratories, library, publications, lecture courses, and all scientific and maintenance activities.

SECTION 2. These By-Laws may be amended at any regular meeting of the Board of Trustees by a two-thirds vote of all the members present, provided the amendment shall have been proposed at a preceding regular meeting.

HONORARY MEMBERS

AYER, EDWARD E.
AYER, MRS. EDWARD E.
BLACKSTONE, MRS. T. B.
CHALMERS, WILLIAM J.
CRANE, CHARLES R.
FIELD, MARSHALL
FIELD, STANLEY

GRAHAM, ERNEST R.
HARRIS, ALBERT W.
JONES, ARTHUR B.
McCORMICK, STANLEY
RYERSON, MARTIN A.
SIMPSON, JAMES
SPRAGUE, ALBERT A.

PATRONS

ANDERSON, PEIRCE
ARMOUR, ALLISON V.
BUTLER, EDWARD B.
COLLINS, ALFRED M.
CUMMINGS, MRS. ROBERT F.
DAY, LEE GARNETT
HUTCHINSON, CHARLES L.
KELLEY, WILLIAM V.

KENNEDY, VERNON SHAW
KUNZ, GEORGE F.
MANIERRE, GEORGE
MARKHAM, CHARLES H.
PAYNE, JOHN BARTON
PROBST, EDWARD
SARGENT, HOMER E.
SMITH, WILLARD A.

WHITE, HOWARD J.

CORPORATE MEMBERS

ALDIS, OWEN F.
ANDERSON, PEIRCE
ARMOUR, ALLISON V.
AYER, EDWARD E.

BLAIR, WATSON F.
BORDEN, JOHN
BUTLER, EDWARD B.
BYRAM, HARRY E.

CHALMERS, W. J.
CHATFIELD-TAYLOR, H. C.
COLLINS, ALFRED M.
CRANE, JR., RICHARD T.
CUMMINGS, MRS. ROBERT F.

DAVIES, D. C.
DAY, LEE GARNETT

EASTMAN, SIDNEY C.
ELLSWORTH, JAMES W.

FIELD, MARSHALL
FIELD, STANLEY

GAGE, LYMAN J.
GRAHAM, ERNEST R.

HARRIS, ALBERT W.
HUTCHINSON, CHARLES L.

JONES, ARTHUR B.

KEEP, CHAUNCEY
KELLEY, WILLIAM V.
KENNEDY, VERNON SHAW
KOHLSAAT, HERMAN H.
KUNZ, GEORGE F.

MCCORMICK, CYRUS H.
MANIERRE, GEORGE
MARKHAM, CHARLES H.
MITCHELL, JOHN J.

PAYNE, JOHN BARTON
PECK, FERDINAND W.
PORTER, GEORGE F.
PROBST, EDWARD

RYERSON, MARTIN A.

SARGENT, HOMER E.
SIMPSON, JAMES
SMITH, SOLOMON A.
SMITH, WILLARD A.
SPRAGUE, ALBERT A.
STONE, MELVILLE E.

WHITE, HOWARD J.
WRIGLEY, JR., WILLIAM

LIFE MEMBERS

ALDIS, ARTHUR T.
ALDIS, OWEN F.
ALEXANDER, WILLIAM A.
ALLEN, BENJAMIN
ALLERTON, ROBERT H.
AMES, JAMES C.
AMES, KNOWLTON L.
ARMOUR, ALLISON V.
ARMOUR, A. WATSON
ARMOUR, J. OGDEN
ARMOUR, LESTER
AVERY, SEWELL L.
AYER, EDWARD E.

BABCOCK, FRED K. R.
BAKER, MISS ISABELLE
BANCROFT, EDGAR A.
BANKS, ALEXANDER F.
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MODEL OF A FOSSIL CYCAD FLOWER.
Two thirds actual size.



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PALMER, POTTER
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PATTEN, HENRY J.
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PEABODY, AUGUSTUS S.
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VON KLEINWACHTER, DR.
LUDWIG.

SAUTER, LEONARD J.
SCHMIDT, DR. O. L.
SCHWARTZ, G. A.
SCUDDER, J. ARNOLD
SEABURY, CHARLES W.
SHORTALL, JOHN L.

WACKER, CHARLES H.
WAITE, MISS MURIEL W.
WALKER, BERTRAND
WALKER, JAMES R.
WHEELER, SEYMOUR
WHINERY, CHARLES C.
WHITEHEAD, W. M.
WILD, RICHARD
WILSON, MRS. E. CRANE
WILSON, M. H.

DECEASED 1923

ADAMS, CYRUS H.
FULLER, O. F.

PARKER, FRANCIS W.
PEARSON, MRS. E. H.
STOCKTON, JOHN T.





WILLIAM J. CHALMERS.
A TRUSTEE OF THE MUSEUM SINCE ITS ORGANIZATION,
AND CHAIRMAN OF THE BUILDING COMMITTEE.

FIELD MUSEUM OF NATURAL HISTORY.

PUBLICATION 227.

REPORT SERIES.

VOL. VI, No. 4.

ANNUAL REPORT OF THE
DIRECTOR

TO THE
BOARD OF TRUSTEES

FOR THE YEAR 1924.



CHICAGO, U. S. A.

January, 1925.

A121

121/26

BEQUESTS

Bequests to Field Museum of Natural History may be made in securities, money, books or collections. For those desirous of making bequests to the Museum, the following form is suggested:

FORM OF BEQUEST

I do hereby give and bequeath to "FIELD MUSEUM OF NATURAL HISTORY" of the City of Chicago, State of Illinois, _____

Cash Contributions made within the taxable year to Field Museum of Natural History to an amount not in excess of 15% of the tax payer's net income are allowable as deductions in computing net income under the Revenue Law.

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THE LATE GEORGE MANIERRE
SECRETARY OF THE MUSEUM CORPORATION FROM APRIL, 1894, TO MAY, 1907,
AND CHAIRMAN OF THE AUDITING COMMITTEE.

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DIRECTOR

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 ALBERT B. LEWIS—*African and Melanesian Ethnology*
 HELEN C. GUNSAULUS—*Japanese Ethnology*
 RALPH LINTON—*North American Ethnology*

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DEPARTMENT OF GEOLOGY

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DEPARTMENT OF ZOOLOGY

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DEPARTMENT OF THE N. W. HARRIS PUBLIC SCHOOL EXTENSION

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ANNUAL REPORT OF THE DIRECTOR

1924

To the Trustees of Field Museum of Natural History.

I have the honor to present a report of the operations of the Museum for the year ending December 31, 1924.

A marked increase of interest in the activities of the Institution is distinctly the outstanding feature of the year under review. The innumerable advantages offered to the public by the Museum are being daily more appreciated. The tremendous impetus and inspiration which this appreciation gives to the scientific and maintenance forces of the Museum augurs well for its future and signifies gratifying approval of its methods of disseminating knowledge and entertainment.

Details which are given in the report indicate that the affairs of the Museum are in a healthy condition and give evidence of its wide influence and extensive investigations in many fields. While the year has been a busy one and the results satisfactory, yet considering the increasing requirements and the constantly growing importance of the Museum, the fifth year of occupancy of the new building seems to demonstrate, as have each of the four previous years, the necessity for still greater effort.

The expenses of the Museum under the head of maintenance have been in excess of the budget this year. However, the large amount that was expended for fittings for the work rooms, storage areas and the laboratories, and the refinishing of all exhibition cases in the Department of Botany, are not in a sense a proper charge against maintenance. If this is taken into consideration, the expenditures have been below the budget allowance. It may seem from the evidence of this work that the building is being refurnished. This, as a matter of fact, is true in so far as the working areas on the third floor are concerned. These growing needs of the Museum and the extensive improvements and additions necessary to maintain the increasing demands of its departments, are an indication of the development of the entire Institution. More and more each year the Museum is becoming better equipped to perform all of its necessary labor, not only for technical and scientific purposes, but

for the ordinary maintenance work as well. It is now only under unusual circumstances that outside agencies need to be engaged.

The excess of expenditures over the revenue shows a deficit of \$33,000.00 for the year, which amount was voluntarily assumed by President Field. In addition to this Mr. Field has contributed during the year the sum of \$78,576.00. A part of this was directed towards the deficit existing in the Building Fund and the remainder was the stated annuity provided for the work in the Plant Reproduction laboratory.

Captain Marshall Field has increased his annuity to \$100,000.00 which enables the Museum to extend its expeditionary program and to increase the issue and enlarge the scope of its scientific publications. Of especial interest was the inauguration of two new series of publications, the first being the "Design" Series, of which two numbers were issued, and the other a publication designated as the "Memoirs" Series. The first number of the latter series was in press shortly before the end of the year.

The benefactions of Mr. Edward E. Ayer to the library which has been named in his honor, have continued, reference to which is made elsewhere. Mr. Ayer has also made notable additions to the pewter collection which also bears his name, several very important examples of this alloy having been added to the original collection. A commodious room on the second floor has been allotted to this splendid exhibit.

Mr. Arthur B. Jones has provided the funds for the purchase of an important Maori collection, which came from Captain T. E. Donne, a well-known citizen of New Zealand.

An invitation to coöperate with the American Museum of Natural History in its important survey in Mongolia has been heartily welcomed. Under the arrangements already perfected, the Museum is to share in the results of the expedition. It is earnestly hoped that this undertaking marks a beginning of a consolidation of the interests of American museums, and that it will result not only in valuable coöperation, but in the elimination of wasteful duplication of efforts.

An additional contribution of \$100,000.00 to the Harris Extension Fund, made by the family of the late Norman W. Harris, was one of the most important gifts of the year, enabling this department to increase the distribution of exhibition cases to the public schools and to provide a new distributing car. This car was placed in operation at the beginning of the fall school term. This benefaction adds to the income of the Harris Extension Fund a sum slightly over \$6,000.00 per annum.

Mr. Charles R. Crane has continued his contributions towards the publication of the work on the "Birds of the Americas." The third part of this series was issued during the year.



CEREMONIAL COSTUMES OF THE PAWNEE, SHOWING NEW METHOD OF INSTALLATION ON FORMS. HALL 6.

About one-twentieth actual size.

The family of the late Mr. George Manierre presented to the Museum a collection of specimens from North America, Mexico, Panama, Australia, Japan, Egypt, and Russia, consisting of prehistoric pottery, tobacco pipes, stone implements, baskets, etc., which is a most acceptable addition to the collections in the Department of Anthropology.

In appreciation of Mr. Edward E. Ayer's life-long devotion to the work of the Museum and his great liberality in adding to its collections, Mr. and Mrs. Julius Rosenwald contributed to the Museum the sum of \$25,000.00. The income from this contribution is to be used for the next ten years in filling gaps in the North American Indian collections in the Museum. At the end of this term, the income is to be devoted to the purchase of scientific books for the departmental libraries.

The progress of the Museum is further encouraged by the support received from the tax levied by the South Park Commissioners. This income is used solely for maintenance, but is not sufficient by any means to meet the present and increasing needs of the Institution.

Grateful acknowledgment is made of the courtesies extended by the Chicago Rapid Transit Company, the Illinois Central Railroad Company, the Chicago Surface Lines, the Rock Island Railroad Company, the Aurora and Elgin Electric Lines, and the department stores of Chicago, in exhibiting posters and placards directing the attention of the public to the Museum and its work.

The membership campaign inaugurated during the previous year has been highly successful. The activities in this direction have resulted in the following additions to the different classes of memberships:

| | |
|--------------------------|-----|
| Life Members | 28 |
| Associate Members | 472 |
| Sustaining Members | 283 |
| Annual Members | 557 |

The By-Laws have been amended for the purpose of adding three new classes of members, viz: Benefactors, Fellows, and Non-Resident Life. Reference to the memberships newly created will be found in the amended By-Laws included in this report.

The gratifying increase in the attendance of visitors to the Museum may be accounted for in part by the canvass for memberships, but doubtless in greater measure by the publicity given to the Institution and its activities by the press and the transportation companies.

The organization of a Live Wild Flower exhibit during the summer and autumn months attracted many people to the Museum and may be spoken of as successful beyond expectation. This exhibit was suggested by the Department of Botany and has been promoted under its direction.

During the year the vacancies existing in the membership of the Board of Trustees were filled by the election of Mr. Charles H. Markham and Mr. Silas H. Strawn.

The Trustees have named the hall in which the ichthyological collections are exhibited the Albert W. Harris Hall, in honor of Mr. Albert W. Harris.

The additions to the staff during the year were as follows; H. F. Ditzel, Registrar, R. H. Thompson, Recorder, and H. Boardman Conover, Associate in Ornithology. E. S. Abbey was appointed Sergeant of the Guard to fill the vacancy occasioned by the death of Sergeant Brophy, who had been in the employ of the Museum since its inception, and who left behind him an unimpeachable record for faithfulness and devotion to duty.

Other activities initiated during the year were the inauguration of a series of summer classes for the children of members; the introduction of a series of Fellowships for research work; and the installation of a new system of lighting for habitat groups.

The trouble and annoyance experienced by the constant leaking of the sky-lighted halls demanded prompt treatment, and made necessary the decision to roof over these areas. These skylights, covering an area of 38,500 square feet, have been insulated with a double thickness of Celotex overlaid with Ruberoid roofing. This work was begun August 17, 1924 and was finished November 22nd, at a cost of \$20,250.00. This expenditure was charged to the Building Fund and necessarily increased the deficit of that account, but this, as previously reported, was assumed by President Field.

The roofing over of the skylights changed the method of lighting the halls from that of daylight to artificial lighting, but there is every indication that the artificial lighting is more suitable than daylight for the material exhibited in these areas. Not only is the illumination more uniform, but the fading effects of sunlight are avoided.

All the windows in the exhibition areas have been curtained, and this has not only improved the interior appearance of the openings, but has added to their attractiveness from the outside.

A surface drainage system has been laid in the terrace around the Museum building, and furnished with catch basins along the edge of the grass plot. The entire sidewalk surrounding the Museum has been overlaid with a top dressing of crushed limestone.

The outside steps and the flag pole steps at the north entrance have been caulked with oakum and lead wool. The outside walls of the northeast central pavilion have been caulked with elastic cement, and

the terrace balustrade and outside window sills have been repointed with Portland cement.

The death of Mr. George Manierre, a member of the Board of Trustees for thirty years, closed a career of activity and usefulness in which the Museum very largely shared. His loss is mourned by his fellow-trustees and is sorely felt by the members of the administrative and scientific staff of the Museum. As Chairman of the Auditing Committee for several years, Mr. Manierre made frequent visits to the Museum, and always manifested the greatest interest in the work of its departments. Through his frequent and intimate contact with the staff, its members learned to understand and appreciate him highly.

GENERAL LECTURES.—Two courses of lectures and three special lectures were given in the James Simpson Theatre during the year, bringing the total number of courses presented by the Museum to forty-two. The interest of the public was fully manifested by large and attentive audiences. The ready coöperation of well-known scientific men and lecturers in this work is gratifying, and occasion is here taken to thank them for their participation in these courses.

Following is the Forty-first Free Illustrated Lecture Course, with the subjects and lecturers, delivered during the months of March and April, 1924.

- | | |
|-------|--|
| March | 1—"Glimpses of Canada—Forest, Field and Mountains." Mr. Frank Yeigh, Lecturer and Author, Toronto, Canada. |
| March | 8—"Explorations in the Malay Peninsula" (Arthur B. Jones Expedition, 1923). Dr. Fay-Cooper Cole, University of Chicago. |
| March | 15—"The Royal Mummies." Dr. T. Wingate Todd, Western Reserve University, Cleveland, Ohio. |
| March | 22—"On the Track of an Unknown Sheep." Mr. John B. Burnham, American Game Protective and Propagation Association, New York City. |
| March | 29—"The Grand Canyon of the Colorado River." Mr. E. C. Larue, United States Geological Survey, Washington, D. C. |
| April | 5—"On Darwin's Trail in South America" (Captain Marshall Field Expedition). Dr. Wilfred H. Osgood, Curator of Zoology, Field Museum of Natural History. |

- April 12—"Peruvian Trails."
Dr. George S. Bryan, Department of Botany,
University of Wisconsin.
- April 19—"Journeys in Brazil."
Dr. Oliver C. Farrington, Curator of Geology, Field
Museum of Natural History.
- April 26—"The Passing of the Old West."
Lieut. Col. Charles Wellington Furlong, F. R. G. S.,
Boston, Mass.

Following is the Forty-second Free Illustrated Lecture Course,
with subjects and lecturers, delivered during the months of October,
November and December, 1924:

- October 4—"Wild Animals I Have Known."
Mr. Ernest Thompson Seton, Greenwich, Con-
necticut.
- October 11—"The People of Japan."
Dr. William Elliot Griffis, New York City.
- October 18—"Six Thousand and One Minutes in Galapagos."
Dr. William Beebe, Department of Tropical Re-
search, New York Zoological Society.
- October 25—"Tribes of Sumatra" (Arthur B. Jones Expedition,
1923).
Dr. Fay-Cooper Cole, leader of the expedition.
- November 1—"The Gateway of the Sahara."
Lieut. Col. Charles Wellington Furlong, F. R. G. S.,
Boston, Mass.
- November 8—"The Wonders of Wood."
Professor Samuel J. Record, Yale University, New
Haven, Conn.
- November 15—"Spain and the Alhambra."
Mr. B. R. Baumgardt, Los Angeles, California.
- November 22—"Babylon as a Center of Civilization, with Special
Reference to the Excavations at Kish, under-
taken by the Field Museum-Oxford University
Joint Expedition under the auspices of Capt.
Marshall Field."
Professor Ira M. Price, University of Chicago.
- November 29—"The Man-Eaters of Tsavo."
Lieut. Col. J. H. Patterson, D. S. O., London.

December 6—"Among the Blackfeet Indians."

Mr. Walter McClintock, M. A., Pittsburgh, Pennsylvania.

The following are the three special lectures delivered during the year:

March 30—"Hunting Gorillas and Volcanoes in Kivu."

Mr. Carl E. Akeley, American Museum of Natural History, New York.

June 1—"Where the Dinosaur Hid its Eggs."

Mr. Roy Chapman Andrews, leader of the Third Asiatic Expedition, American Museum of Natural History, New York.

December 20—"The Tomb of Tut-ankh-Amen."

M. Jean Capart, Director, Royal Cinquantenaire Museums, Brussels, Belgium.

ENTERTAINMENTS FOR CHILDREN.—Moving picture entertainments for children were given in the James Simpson Theatre on Saturday mornings during the Spring and Autumn months. The interest manifested in these pictures is indicated by the total attendance of 34,327 children. Beginning at 9:30 o'clock in the morning, the pictures were shown continuously until 12:30 P.M. In connection with the Autumn course, twelve "Museum Stories for Children" were prepared and issued by the Museum. These stories were distributed to the children, one at each entertainment. Their three-fold purpose was, to supplement the films in the matter of information, to direct the children to Museum exhibits related to the subject of the films, and to provide the children with a souvenir of their visit to the Institution.

The programs for the courses, including one special lecture, were as follows:

March 1—"Hunting Big Game in Africa." First five reels.

March 8—"Hunting Big Game in Africa." Last four reels.
"Time—What It Really Is."

March 15—"The Ant."
"Birds of Prey."
"Animal Camouflage."
"Wild Animals and Their Young."
"Earth and Moon." Part I.

March 22—"Wonders of the Sea."
"Earth and Moon." Part II.

- March 29—"First Families of America" (Hopi Indians).
 "Wild Life Studies: North America."
 "Forest Giants."
 "Nature's Craftsmen."
- April 3—"The Bee."
 "Our Four-footed Pals."
 "From Cocoon to Kimono" (The Silk Worm).
 "The American Fishhawk."
 "The Story of the Seasons—Why They Change."
- April 12—"The Great White North."
 "Aquatic Life."
- April 19—"Our Animals—How They Help Us."
 "The Spider."
 "The Microscope and Beyond."
- April 26—"The Cruise of the Speejacks Around the World."
- May 3—Special Lecture: "Maoriland."
 Leila M. Blomfield, New Zealand.
- October 4—A Lecture: "Wild Animals I Have Known."
 Mr. Ernest Thompson Seton.
 "Animal and Bird Life."
 "Bre'r Rabbit and His Pals."
 "White-tailed Deer."
- October 11—"Captain Kleinschmidt's Polar Adventure."
- October 18—"Children Here, There and Everywhere."
 "All Sorts of Jellyfish."
 "Some Well-known Snakes."
 "Hawks and Buzzards."
 "Sloths and Marmots."
- October 25—"Baby Songbirds at Mealtime."
 "Why Elephants Leave Home."
 "Pond Life."
 "Insects that Mimic."
- November 1—"Trailing African Wild Animals."
- November 8—"Along the Moonbeam Trail" (Prehistoric Animals).
 "Ant Lion."
 "Navaho Indians."
 "In a Drop of Water."
- November 15—"Birds of Passage."
 "Yosemite, the Valley of Enchantment."



THE WILD FLOWER EXHIBIT IN STANLEY FIELD HALL.

- November 22—"Lady Bird."
"Lizards from Everywhere."
"Hummingbirds and Eagles."
"Butterfly."
"How Plants are Born, Live and Die."
November 29—"The First Americans" (Plains and Hopi Indians).
"Our Four-footed Helpers."
"Odd Members of the Crab Family."
"Parrots and Cuckoos."
"Plants with Nerves and Stomachs."
December 6—"Columbus."
December 13—"Sea Worms and Sea Urchins."
"Toad Traits."
"All About Carrier Pigeons."
"A Visit to the New York Zoo."
"Finest on Four Feet" (Dogs).
December 20—"Nanook of the North."

* Grateful acknowledgment is made to Doctor Thomas W. Roberts, Director of the Zoological Museum of the University of Minnesota, for the loan of moving pictures marked with an asterisk.

PUBLICATIONS

A new series of publications was inaugurated during the year, which is designated as the Design Series. It is intended to render accessible in convenient form the artistic designs of primitive and oriental peoples from the rich stores in the Museum collections. The series is especially planned for the needs of teachers and pupils of public, high, technical and art schools, but should also appeal to professional designers, craftsmen, manufacturers, and students of art. The series demonstrates also that the Museum is able to render service to the industrial arts. In the regular publication series eight numbers were issued, most of the numbers being of the Zoological Series. In the new Design Series two numbers were issued and seventeen numbers were added to the general leaflet series.

Following is a list of the publications and leaflets issued during the year:

- Pub. 216—Anthropological Series, Vol. XVI. Japanese Sword-Mounts. By Helen C. Gunsaulus. December, 1923. 196 pages. 61 photogravures. Edition 1,065.

- Pub. 217—Report Series, Vol. VI, No. 3. Annual Report of the Director for the year 1923. January, 1924. 99 pages. 16 photogravures, 1 zinc etching. Edition 3,000.
- Pub. 218—Zoological Series, Vol. XII, No. 4. New Birds from Central Peru. By John T. Zimmer. April, 1924. 20 pages. Edition 993.
- Pub. 219—Zoological Series, Vol. XII, No. 5. New Birds from Chile. By C. E. Hellmayr. April, 1924. 8 pages. Edition 1,109.
- Pub. 220—Zoological Series, Vol. XII, No. 6. Notes on Central American Crocodile. By Karl P. Schmidt. May, 1924. 16 pages. 5 halftones. Edition 1,050.
- Pub. 221—Zoological Series, Vol. XII, No. 7. New Salamanders of the Genus *Oedipus* with a Synoptical Key. By E. R. Dunn. May, 1924. 8 pages. Edition 1,000.
- Pub. 222—Zoological Series, Vol. XIV, No. 2. Revision of Living *Caenolestids* with Description of a New Genus from Chile. By W. H. Osgood. October 20, 1925. 10 pages. 1 zinc etching. Edition 1,100.
- Pub. 223—Zoological Series, Vol. XIII, Part III. Catalogue of Birds of the Americas. By C. B. Cory. Revised and continued by C. E. Hellmayr. November 20, 1924. 372 pages. 1 colored plate. Edition 1,547.

DESIGN SERIES

- Anthropology Design Series, No. 1. Block Prints from India for Textiles. By A. B. Lewis. 24 plates, 2 of which are in colors, and 2 text-figures. Edition 3,076.
- Anthropology Design Series, No. 2. Javanese Batik Design from Metal Stamps. By A. B. Lewis. 24 plates, 2 of which are in colors, and 2 text-figures. Edition 3,050.

LEAFLETS

- Anthropology, No. 12. Japanese Costume. By Helen C. Gunsaulus. 4 photogravures. 26 pages. Edition 3,014.
- Anthropology, No. 13. Gods and Heroes of Japan. By Helen C. Gunsaulus. 4 photogravures. 24 pages. Edition 3,010.
- Anthropology, No. 14. Japanese Temples and Houses. By Helen C. Gunsaulus. 4 photogravures. 20 pages. Edition 3,010.

- Anthropology, No. 15. Use of Tobacco among North American Indians. By Ralph Linton. 6 photogravures. 27 pages. Edition 3060.
- Anthropology, No. 16. Use of Tobacco in Mexico and South America. By J. Alden Mason. 6 photogravures. 15 pages. Edition 3035.
- Anthropology, No. 17. Use of Tobacco in New Guinea and Neighboring Regions. By Albert B. Lewis. 2 photogravures. 10 pages. Edition 3030.
- Anthropology, No. 18. Tobacco and Its Use in Asia. By Berthold Laufer. 10 photogravures. 39 pages. Edition 2984.
- Anthropology, No. 19. Introduction of Tobacco into Europe. By Berthold Laufer. 66 pages. Edition 3031.
- Anthropology, No. 20. The Japanese Sword and Its Decoration. By Helen C. Gunsaulus. 4 photogravures. 21 pages. Edition 3037.
- Botany, No. 4. Cacao. By B. E. Dahlgren. 2 photogravures. 3 text-figures. 14 pages. Edition 3037.
- Botany, No. 5. A Fossil Flower. By B. E. Dahlgren. 6 halftones. 4 zinc etchings. 16 pages. Edition 3078.
- Botany, No. 6. The Cannon-Ball Tree. By B. E. Dahlgren. 6 photogravures. 8 pages. Edition 3050.
- Botany, No. 7. Spring Wild Flowers. By J. Francis Macbride. 2 photogravures. 28 halftones. 32 pages. Edition 6033.
- Botany No. 8. Spring and Early Summer Wild Flowers. By J. Francis Macbride. 2 photogravures. 28 halftones. 30 pages. Edition 6050.
- Botany, No. 9. Summer Wild Flowers. By J. Francis Macbride. 1 color plate. 2 photogravures. 28 halftones. 30 pages. Edition 6050.
- Botany, No. 10. Autumn Flowers and Fruits. By J. Francis Macbride. 1 color plate. 2 photogravures. 28 halftones. Edition 6025.
- Zoology, No. 6. The Wild Turkey. By John T. Zimmer. 1 photogravure. 15 pages. Edition 3055.

LIBRARY

There have been accessioned during the year 2,852 books and pamphlets. The aggregate number at the close of the year was 84,555. Many valuable and important books have been added to the Library by gift, purchase and exchange. Especially noteworthy has been the acquisition of various sets, for a long time among the desiderata of the Library, as follows: Report of H. M. S. Challenger Voyage 50 volumes; Transactions of the Zoological Society of London, 20 volumes; *Der Naturforscher*, 10 volumes, 1774-1804; *Dansk Ornithologisk Tidsskrift*, 17 volumes;

Mitteilungen des Ornithologischen Vereins in Wien, 20 volumes, 1877-1901; Larousse, Grand dictionnaire universelle, 20 volumes; and Encyclopaedia Americana, 30 volumes. The number of books purchased has exceeded that of recent years, and these very essential aids in their work have been greatly appreciated by the members of the staff. Among the important books purchased are the following:

- Hamilton, Maori Art. Céramique Ancienne du Pérou.
- Hobson, Art of the Chinese Potter.
- Binyon-Sexton, Japanese Color Prints.
- Durante, Herbario Nuovo, Rome, 1585.
- Knuth, Handbook of Plant Pollination.
- Gloger, Vogel Europas, 1834.
- Temminck, Histoire Naturelle des Pigeons, 1813-15.
- Brünnich, Ornithologica Borealis, 1764.

Through the continued generosity and interest of Mr. Edward E. Ayer, a number of rare and classic books in ornithology have been secured. A total of 473 volumes were added to the Edward E. Ayer Ornithological Library. Among those received are finely illustrated copies of the following:

- Mme. Knip, Les Pigeons, 2 volumes, 1838, 1843.
- Bonaparte, Iconographie des Pigeons, 1857.
- Thorburn, Game Birds and Wild Fowl of Great Britain, 1923.
- Edwards, Natural History of Birds, 1743-1751.
- Hahn, Deutschlands Vögel, 1835.
- Naumann, Naturgeschichte der Vögel Deutschlands, 14 volumes, 1822-1860.
- Reichenbach, Naturgeschichte der Vögel, 13 volumes, 1834-1863.
- Pennant, British Ornithology, 4th edition, 1776-1777.
- Vieillot, Histoire Naturelle des Plus Beaux Oiseaux Chanteurs, 1805.
- Dawson, Birds of California, 4 volumes, 1924.
- Audubon, Ornithological Biography, 1831.
- Rüppell, Neue Wirbelthiere, 2 volumes, 1835-1840.
- Mikan, Delectus Florae et Faunae Brasiliensis, 1820.
- Phillips, Natural History of the Ducks, 1922-1923.

Mr. Ayer has also enlarged and enriched the ichthyological collection by the purchase of 147 volumes, among which are the following rare sets in complete volumes:

- Agassiz, Recherches sur les Poissons Fossiles, 10 volumes in 6.



MAIN CHAMBER OF THE MASTABA TOMB OF UNIS-ANKH, WITH DOORWAY LEADING INTO AN OUTER CHAMBER.
PRESENTED BY MARTIN A. NYERSON.
EGYPTIAN HALL ON GROUND FLOOR.

- Bleeker, *Atlas ichthyologique des Indes Orientales Néerlandaises*, 9 volumes, 1862-1872.
- Bloch, *Ichthyologie ou Histoire Naturelle Générale et Particulière*, 1785-1797.
- Cuvier and Valenciennes, *Histoire Naturelle des Poissons*, 1828-1849.
- Boulenger, *Zoology of Egypt: The Fishes of the Nile*, 1907.
- Donovan, *Natural History of the British Fishes*, 1802-1808.
- Goode and Kilbourne, *Game Fishes of the United States*, 1879.
- Kroyer, *Danmark's Fiske*, 3 volumes in 4, 1826-1853.
- North, *History of Esculent Fishes*, 1794.
- Richardson, *Zoology of the Voyage of H. M. S. Samarang. Fishes*, 1848.
- Russell, *Descriptions and Figures of Two Hundred Fishes*, 1803.
- Semon, *Zoologische Forschungsreisen in Australien und dem Malayischen Archipel*, 5 volumes in 7, 1893-1903.
- Volta, *Ittiolitologia Veronese del Museo Bozziano*, 3 pts. in 2 volumes, 1706-1809.

These accumulating gifts, especially of the out of print works, are most useful to the present day scientist and they will undoubtedly prove of great value to the student and scholar in the years to come. In addition to these important gifts, other valuable contributions have been received that, aside from their intrinsic value, are especially appreciated because of the interest thus evidenced in the welfare of the Museum Library. Exchange relations have been reestablished with practically all of the institutions on the publication mailing list, and publications have been received during the year from seven hundred and twenty-three governments, societies and individuals.

There were written and inserted in the different catalogues 11,710 cards. The growth of the departmental libraries necessitates the writing in duplicate of author cards for all the books sent to these libraries. Monthly installments of from four to six hundred cards have been received and filed from the John Crerar Library.

Early in the year all of the books in the General Library were removed from the shelves and thoroughly cleaned. A general rearrangement of the books was necessary in order to accommodate current accessions. To further insure the preservation of the books in leather bindings approximately fourteen thousand volumes were furbished and oiled. This work was done by expert bookbinders from the Monastery Bindery. There were sent to and returned from the bindery during the year 924 volumes.

The departmental libraries now present an appearance of order and system that, because of the exigencies of moving, has taken some time to attain. These libraries have been more conveniently located by moving them into rooms adjoining the offices of the Curators of the various departments. These rooms have all been freshly decorated and furnished with new stacks and cases which greatly add to their usefulness and appearance.

DEPARTMENTAL CATALOGUING, INVENTORVING AND LABELING

ANTHROPOLOGY.—In the Department of Anthropology the work of cataloguing has been continued as usual, the number of catalogue cards prepared during the year totaling 4,306. These cards are distributed geographically as follows: North American ethnology 65; South American archaeology and ethnology 1,455; Polynesian ethnology 1,282; Tasmania and Africa 10; Federated Malay States 408; Ancient Egypt 17; Greece and Miletos, Asia Minor 19; Kish, Mesopotamia 120; China, Japan, and Korea 747; Burma 1; and Edward E. Ayer pewter collection 181. Of these cards 3,898 have been entered in the inventory books of the Department, which number 42. The 2,053 catalogue cards for accessions received in 1923 were also entered, bringing the total of catalogue cards entered to 5,951. The number of accessions received during the year amounts to 60, of which 30 have been entered. There were also 20 accessions from previous years tabulated. The total number of catalogue cards entered from the opening of the first volume is 163,889. Several thousand labels for exhibition material were prepared and installed in the cases, the number of labels supplied by the printer totaling 3,226. These labels are distributed as follows: China 1,123; Edward E. Ayer pewter collection 739; American Indians 679; Kish, Mesopotamia 307; Classical archaeology 218; Egypt 109; Malaysia 36; Japan 9 and miscellaneous 6. The printer supplied the department with 7,000 catalogue cards, 300 accession envelopes, 423 case numbers, and 526 cards for the study collections. There were prepared 450 label cards, which were added to the label-file. To the Departmental albums 182 photographs were added and three new albums started; one for photographs from the Federated Malay States; one for postal cards, and one for the prints of lantern-slides.

BOTANY.—In the Department of Botany catalogue, 16,761 entries were made during the year, and 4,067 carried over from the previous year, bringing the total number of catalogued specimens in the depart-

ment to 550,076. The entries added to the department index to collectors number 217, and to the index of geographic localities 53.

Many labels were prepared during the year and placed in the exhibition halls. In the herbarium thousands of labels and genus covers were provided, particularly for algae, lichens and fungi, in connection with the Cryptogamic Herbarium, and likewise for economic specimens. Of printed labels, 1,608 were received from the Section of Printing.

GEOLOGY.—The catalogue entries in the Department of Geology during the year number 9,668. The majority of these were of invertebrate fossils of the Borden collection, the cataloguing of this collection having been continued. Other series catalogued were a part of the specimens collected by the Curator in Brazil and all current accessions. Some previously unrecorded specimens found in revising the study collection were also entered. A total number of 649 labels were written, 27 of these being descriptive. The descriptive labels related to exhibited minerals, phases of physical geology, fossils and some other newly placed exhibits, the smaller labels were for minerals, fossils, ores, etc. Sixty labels were provided for the maps and atlases filed in cases. Typewritten labels numbering several thousand were also prepared and placed with the corresponding specimens in the study collection. To the Department photograph albums 364 prints were added, making a total of 4,416. The additions were chiefly of photographs made by the Curator in Brazil.

ZOOLOGY.—Considerable progress has been made during the year by the Department of Zoology in the cataloguing of specimens. The total number of regular entries made were 3,782 distributed as follows: Mammals, 1479; Birds, 154; Reptiles and Amphibians, 1,141; Fishes, 994; Insects, 14. In addition to these entries in the serial catalogues, there were made 2,390 entries in the index catalogue of reptiles and amphibians which is now complete for all the identified frogs, salamanders, turtles, crocodiles and lizards. A large number of cards were also written for the index catalogue of mammals, the number of entries in the different catalogues for the year thus reaching a total well over six thousand. Labeling specimens was to a large extent coincident with cataloguing and nearly all specimens recorded were also labeled, as well as many others, especially in the divisions of mammals and of reptiles. Besides the skins of mammals labeled, all cleaned skulls were carefully numbered and labeled. Photographs and lantern slides to the number of 675 were labeled and filed in the Department.

The following table shows the work performed on catalogues and inventories in the various Departments:

| | Number of Record Books | Total No. of entries to Dec. 31, 1924 | Entries during 1924 | Total No. of cards written |
|---------------------------------|---------------------------|--|---------------------------|----------------------------------|
| Department of Anthropology..... | 42 | 163,889 | 5,954 | 164,297 |
| Department of Botany..... | 63 | 339,076 | 20,828 | 8,400 |
| Department of Geology..... | 26 | 163,588 | 9,672 | 6,822 |
| Department of Zoology..... | 40 | 112,453 | 3,782 | 37,359 |
| The Library..... | 14 | 145,245 | 11,601 | 329,627 |

ACCESSIONS

ANTHROPOLOGY.—The accessions received during the year by the Department of Anthropology amount to 60; of these, 50 are by gift, 3 by exchange, 2 by purchase, 4 as the result of Museum expeditions, and 1 representing loan material returned from Hull House. The most important collection coming from an expedition represents the first results of the Field Museum-Oxford University Joint Expedition engaged in the excavation of Kish, Mesopotamia. The material received this year illustrates very vividly the life and earliest culture of the ancient Sumerians who preceded the Semites in the Euphrates Valley. It is particularly rich in pottery vessels, consisting of 82 complete jars and 166 sherds with stamped and incised designs, which promise to be of great significance for the study of primitive decorative art. Flint and other stone implements, a stone door-post, a stone mortar with pestle, numerous copper tools, weapons, and dishes, bone and iron implements, a silver cup, silver bracelets and bosses worn as jewelry, 27 cylinder seals with engraved designs, 14 necklaces of lapis lazuli, rock-crystal, agate and carnelian beads, 40 clay figures representing mythological subjects and animals, four large stamped bricks, and nine tablets and cones covered with cuneiform inscriptions are other prominent features of the collection. One of the stamped bricks comes down from the twenty-first century B.C. and contains an inscription of Samsu-iluna, "king of Babylon and Kish, king of the four regions," who records his restoration of the stage-tower of Kish for the god Ilbaba and the goddess Ishtar. Reproductions of a stylus for writing, said to be the only writing instrument ever discovered in Babylonia, and of a pictographic stone tablet, both believed to date *ca.* 4,600 B.C., were sent by Prof. S. Langdon of Oxford. The total number of specimens received to date from this expedition amounts to 634. The last installment of the collections made in Colombia by former Assistant Curator Mason, under the auspices of

Captain Marshall Field, and accessioned last year was received in March in 32 cases. The material includes a great number of large pottery vases and stone implements. A stone axe, a slate celt, and a projectile point coming from Chile were received from the Captain Marshall Field Zoological Expedition to Chile and Argentina. A human skull and five flint implements associated with it were found in the Territory of Santa Cruz, Argentina, by the Captain Marshall Field Palaeontological Expedition to Argentina.

A very important acquisition of the year is represented by the well-known New Zealand collection of Captain T. E. Donne, presented by Mr. Arthur B. Jones. It includes prominent examples of Maori feather and flax robes, wood carvings, ornaments and weapons, and an unusually complete series of stone implements. Many of the objects are of types no longer obtainable in New Zealand. The collection is especially rich in jade, there being no less than 563 ornaments and implements of this stone. These include practically all the known forms of Maori jade work, together with unfinished artifacts and the tools used in their manufacture. This accession, together with the collections formerly acquired by the Museum, places the institution in the foremost rank as to Maori collections in the United States. A large Maori adze of unusually fine green jade was purchased from Mrs. J. F. Hoffman. A carved gable ornament from a Maori house was received through exchange with Mr. W. C. Chandler. It is a rare old piece carved with stone tools. A fine old Hawaiian food bowl is the gift of Mrs. E. D. Hulbert. It is of the type used for eating *poi*, a gruel made from pounded taro. It was highly valued by its native owners, and has been skillfully repaired in several places with wooden patches, inset and polished down smoothly in the interior and exterior.

Mr. Edward E. Ayer continued his efforts to make his collection of pewter as representative as possible, with the result that 115 objects were added to his already substantial gift of 324 specimens of pewters during the preceding year. These 115 objects were received in sixteen separate lots, covering a period from January 18th to December 10th. This indication of Mr. Ayer's unremitting enthusiasm in assembling such numerous and excellent examples from many parts of the world is gratefully acknowledged. England and Germany are represented with 42 specimens in these new accessions, China with 66, Japan with 7. To these a pitcher from Strasbourg, Alsace, was added by Mrs. Edward E. Ayer. From an archaeological viewpoint the most interesting acquisition is a Chinese pewter tablet of rectangular shape found in a grave of Honan Province and covered with a lengthy inscription in incised char-

acters, which yields the date A.D. 85 in the Han dynasty. An analysis made by Mr. H. W. Nichols reveals the fact that the alloy is composed of tin 19.2 per cent, lead 78.5 per cent, and zinc 1.5 per cent, and thus represents a real pewter. It was heretofore not known that pewter was manufactured in China at so early a date. This tablet may therefore claim the honor of being the oldest pewter object extant. The inscription engraved in the surface represents a deed or grant of land for the burial-place of the Governor of Tung-kün, a great scholar, who was highly esteemed by his contemporaries and who died in A.D. 84. The new acquisitions comprise fine tea-caddies made by Yazaemon of Kyoto in the eighteenth century and a number of Chinese boxes, trays, and jars inlaid with designs, scenes, and figures in brass. These are all of a high degree of workmanship and of great artistic merit, and date in the Ming period (fifteenth and sixteenth centuries). The Edward E. Ayer collection of Pewter has now grown to such proportions, that the development of Chinese pewter productions through five centuries can be clearly traced and studied to great advantage.

A very interesting collection of Chinese gourds, pottery vessels and accessories for keeping singing and fighting insects was received from Mr. Robert E. Stevenson of Peking, China. Through an arrangement made by Mr. Edward E. Ayer, who acquired the collection of Chinese pewter made by the Blackstone Expedition in 1910 for his pewter room, this new accession has been credited to the Blackstone Collections. A similar collection, relating to insects, was obtained by the Curator in China in 1923; it is now appropriately supplemented by this new acquisition, which includes many ancient pieces of the eighteenth century and many carved gourds with elaborate covers of ivory and jade, all coming from the possession of old families. These two lots combined present a perfectly unique collection, such as does not exist elsewhere. They illustrate the sentimental qualities of the Chinese, their fondness of the insect musicians with studied methods of rearing and keeping them, and their keen interest in this harmless sport. A cricket-fight, especially one in which renowned champions take part, arouses great excitement and wagering, and stirs up as strong emotions among Chinese as a prize-fight in America. Mr. Stevenson presented to the Museum an ivory insect-cage, a gourd with ivory cover, an ivory box, and a glazed jar.

A large embroidered cover of white silk made at Canton, China, in the beginning of the nineteenth century, was presented by Mrs. Frederick F. Bullen of Chicago. The embroidery, of white silk also, presents an elaborate composition of floral, animal, and bird designs, lions playing ball, kiosks, pavilions, and pagodas. A miscellaneous collection of small

objects presented by Mrs. L. M. Kneeland, Chicago, includes two interesting Chinese fans of carved and painted ivory brought to this country by a sea-captain in 1800. A fine old brass image of a standing Buddha in the attitude of preaching, from Mandalay, Burma, is the gift of Mr. F. A. Hardy of Evanston, Illinois. It is a solid cast and a statue of unusually good quality.

A notable addition was made to the Frank W. Gunsaulus Hall by Mrs. Koshichi Tsukamoto of this city, who presented the Institution with two completely dressed figures of Japanese women. They were made at Kyoto, Japan, under the direction of Mr. N. Sudzuka, whose conception of the figures is that of two unmarried sisters; society girls, dressed for the occasion of a garden-party or ready to accompany friends on an outing. The figures are skillfully carved from the wood of the kiri tree (*Paulownia imperialis*), and the faces show the aristocratic type of the best Japanese society. The color of the complexion is well reproduced by many coatings with *gofun*, a preparation of chalk mixed with powdered sea-shells, which yields a fine lustre effect. This is a laborious process that requires over a half year's time. The silk material for the dresses, of first quality, was especially woven for the occasion. The elder sister is clad with an outer garment of Kinsha-crepe decorated with colored designs partially woven in and partially embroidered. The designs represent a garden with pine and maples in an aristocratic residence, as it was popular a century ago in the Tokugawa period. The sash, the most prominent feature in a Japanese dress, is made of brocade decorated with designs of a white phoenix, chrysanthemums, and fan. The younger sister wears a dress of green Kinsha-crepe adorned with printed designs of cherry and wistaria, which were popular in the Fujiwara period. She carries a parasol of silk gauze painted with floral designs, while the elder sister is equipped with a fan and a crepe bag in lavender color.

Miss Adele Barrett of Chicago presented a valuable Japanese suit of armor, which is by far the best example of this class now in the Museum collections. It evidently belonged to a high officer of the Samurai class. The suit is made of separate laminae of lacquered leather laced in green and red braid, and tied in place at the back and shoulders by heavy cords of red silk. Breastplate, helmet, and shoulder-pieces are decorated with painted leather and ornaments of silver and copper gilt. The front of the helmet is surmounted by the full figure of a falcon carved from silver. The sleeves are of chain-mail, and are provided with gauntlets of solid iron pieces fastened together by hinges of butterfly form. The face is covered by a mask of iron with a removable nose-piece. A signaling fan,

a sword, and a spear complete the outfit. The left tace is inscribed with a date ("sixth year of the period Shohci") corresponding to our year A.D. 1351.

A valuable collection of twenty-two old Japanese tobacco-pipes was presented by Mr. Homer E. Sargent of Pasadena. As the Museum had no pipes from Japan, this collection is especially appreciated. The pipes are of bamboo, brass, iron inlaid in silver and gold, and enamel; they are of excellent workmanship and exhibit a great variety of forms and designs. Mr. Sargent likewise presented a moose shoulder-blade used for the moose-call, a bow with seven arrows, and a pair of snow-shoes from the Yukon Territory, Canada. A collection of eighty very interesting small ivory carvings made by the Eskimo of Labrador, Canada, was purchased by the Museum.

Mrs. Joseph Adams presented several valuable miscellaneous objects consisting of a Navaho saddle blanket and silver necklace, a pair of silver ear-rings and a silver fillet of a Negro woman from Barbados, Trinidad, and baskets from China, Samoa, the Sudan, Chile, and Northwest Coast.

A red obsidian spear-head from the Yurok tribe of Humboldt County, presented by Mr. Chauncey Keep, is a welcome addition to the obsidian blades contributed last year by Mr. Chauncey Keep and Mr. Watson F. Blair jointly, and illustrated in the Annual Report for the year 1923. Mr. L. Winternitz presented a garment of the Seminole Indians of Florida and four dolls showing the modes of dressing of the same tribe.

A small American Indian collection was obtained through exchange with Mr. M. C. Chandler. It includes Iroquois garments and implements of types not previously represented in the Museum, and a number of objects from the Fox of Iowa. There are some fine examples of old bead and ribbon work, woven bags, and a feather necklace worn only by famous warriors. The complete paraphernalia of a Tlingit shaman, consisting of a bear-skin cloak, rattles, head-dresses, necklaces, and charms, was received through exchange with Lieutenant G. T. Emmons. The Museum has few ceremonial objects from this tribe, and the shaman's outfit forms an important addition. A large Chilkat blanket, in perfect condition and differing in design from those in the possession of the Museum, was presented by Mrs. James W. Scott. A Comanche woman's costume of white-beaded buckskin was secured through exchange with A. Skinner. It is a novel type hitherto unrepresented in the collections.



NORTH AMERICAN CATS.
INSTALLED FOR SYSTEMATIC EXHIBIT OF MAMMALS.
TAXIDERM BY JULIUS FRIESSER.
Length of case 12 feet.



BOTANY.—The largest accessions in the Department of Botany during the year were the Zenker, Kamerun, collection by purchase from Museum d'Histoire Naturelle, Paris, containing, approximately, 5,000 specimens, and a collection of 4,000 Philippine plants from A. D. E. Elmer, Manila. Other collections acquired by purchase were 839 Peruvian plants from Dr. A. Weberbauer of Lima; a collection of 539 specimens from Santa Cruz, Bolivia, from Jose Steinbach; 548 plants of British Guiana from Dr. H. A. Gleason of New York Botanical Garden; 302 specimens from Santa Cruz, collected by Dr. E. Werdermann of Santiago de Chile; 375 numbers from W. E. Broadway of Port of Spain, Trinidad; 206 Mexican plants from T. S. Brandegee, University of California; 360 of various European collectors from Theo. Weigel, and 100 specimens from the Canaries from O. Burchard, Teneriffe. A gift of 150 herbarium specimens was received from Prof. E. B. Payson, Laramie, Wyoming; 58 from Prof. S. J. Record of the Yale School of Forestry; 30 from Dr. C. R. Ball, Washington; 4 from Dr. J. N. Rose, Washington, and 12 from Dr. E. E. Sherff, Chicago.

By exchange there were received during the year from the Gray Herbarium 587; the Royal Botanic Gardens, Kew, England, 335; and from the United States Department of Agriculture 1,634, making a total of 2,556 numbers. There were received 500 herbarium specimens from the Captain Marshall Field Paleontological Expedition in Patagonia collected by E. S. Riggs. The collections made by A. C. Persaud in British Guiana are also credited to a Captain Marshall Field Museum Expedition. Of the 772 specimens 87 are pieces of tropical woods of great value, being accompanied in each case by abundant herbarium material collected at the same time and from the identical tree yielding the wood. From Brazil 16 economic specimens, collected by Dr. O. C. Farrington on the Captain Marshall Field 1924 Brazilian Expedition, were received. The department sent out in exchange 2,366 herbarium specimens during the past year. Loans made to other herbaria number 42, involving 4,349 specimens, while 1,202 herbarium sheaths were borrowed from 13 other institutions for study in the Museum.

GEOLOGY.—The Department of Geology is indebted to Hon. Stephen T. Mather and Messrs. Ford and Byron Harvey for the gift of two valuable stone slabs showing fossil tracks. These slabs, having a total area of ten square feet, show well-preserved tracks of some amphibians of the Carboniferous period. They were collected on the Hermit Trail at Grand Canyon, Arizona. They are of interest, not only for their degree of preservation, but for their record of early amphibian life. It is a

pleasure to acknowledge the kind offices of Mr. Edward E. Ayer in connection with this gift. By gift from Mr. William J. Chalmers twenty-eight specimens of crystallized minerals were added to his previous generous contributions to the collection of crystals. Especially worthy of mention are two fine specimens of the rare and beautiful mineral, diopase. A cut Persian turquoise of remarkable size, weighing 234.7 carats, was presented by Mr. H. H. Topakyan. Two teeth of especially large size of the fossil mammoth found in Snake River, Idaho, were presented by Mr. H. S. Burroughs. The Indiana Limestone Quarrymen's Association presented a full series, numbering twenty-one specimens, of the varieties of Indiana limestone used in building. Before presenting the specimens the Association obtained full information from the Museum as to the size and finish desired, and prepared the exhibit in accordance with these specifications. Three specimens showing the interesting phenomena of stylolites were also presented by this Association. Several new varieties of candles and of oils presented by the Standard Oil Company (Indiana) make a desirable addition to the representation of petroleum products. A number of specimens of a new occurrence of axinite and some other minerals were collected by Associate Curator Nichols while on a trip to the Porcupine gold mining region, Canada, and a total number of nine specimens of telluride gold ores from the same region were presented by the Lake Shore Mines, Ltd. and the Wright-Hargreaves Mines, Ltd.

By exchange with the U. S. National Museum a full-sized section of the Four Corners meteorite, and a cast of the same, were acquired, and by exchange with Henry E. Lee, 20 specimens of fossil plants of Lower Cretaceous age from South Dakota.

The most important accession by purchase was that of three skeletons of duck-billed dinosaurs. These are forms which have not hitherto been represented in the Museum and come from a new faunal horizon, that of the Kirtland shales of Upper Cretaceous age in New Mexico. The skeletons are nearly complete and will provide good mounts. One skull is remarkable for its size, being four feet in length. A series of six casts representing restorations of fossil horses, obtained by purchase, aids in interpreting the relations of the incomplete specimens of these horses now on exhibition. To the meteorite collection an entire stone meteorite of a recent fall from Kansas weighing eleven pounds, was added by purchase, as well as an individual of the Ness City, Kansas, fall weighing three pounds.

From the Capt. Marshall Field Paleontological Expedition to Argentina there were received during the year 82 boxes and 12 barrels of

specimens collected by the Expedition. The shipments included archeological, botanical and zoological specimens which were unpacked and distributed to the corresponding departments of the Museum. The remaining specimens for the most part have been retained in their original packages, and are being unpacked only as they are needed for preparation for exhibition.

ZOOLOGY.—The total accessions in the Department of Zoology number 10,414, the larger part being the result of gifts and purchases rather than expeditions, since no shipments arrived from the principal expedition in the field during the year. The specimens accessioned comprise the following: Mammals, 571; birds, 3,155; eggs and nests, 165; reptiles and amphibians, 1,682; fishes, 955; insects, 3,876. Of the 218 mammals purchased, 104 were from central Europe, 62 from West Africa, and the remainder from South America.

The most extensive gift received by the Division of Birds consisted of 880 birdskins, 43 sets of eggs and 30 nests, presented by Mr. J. Grafton Parker of Chicago. The collection was assembled from 1885 to 1895 or 1897, mostly in Illinois, Indiana and Wisconsin, with some material from Texas, California, and scattered localities elsewhere. Many of the Illinois birds were taken in localities that now form solidly built sections of the city of Chicago. Besides those which thus have a historical interest, there are a number of local rarities and other desirable specimens, including two examples of the extinct Passenger Pigeon. Another gift of local interest is that of a nest and egg of the Passenger Pigeon, presented by Judge R. Magoon Barnes, one of the very few nests of this bird that are known to be preserved.

Important purchases of birds include a collection of 390 specimens from northeastern Brazil, in which there is much material new to the Museum and some forms probably undescribed in ornithological literature. Among the especially desirable species are *Anocettula recurvirostris*, *Todirostrum illigeri*, *T. schulei* and *Pachysylvia rubrifrons*. A further purchase of 297 European birds was made, supplementing the larger collection obtained from the same region in 1923. Small lots of birds were received from various sources and, taken all together, the new bird material for the year represents a wide range of territory including the following countries: Australia, New Guinea, Japan, Korea, India, Ceylon, Formosa, Turkestan, Loo Choo Islands, Germany, Portuguese Guinea, Uganda, Cape Colony, West Indies, Costa Rica, Panama, Colombia, Ecuador, Peru, Chile, Argentina, Bolivia, Brazil, British Guiana, Venezuela, Canada, and various parts of the United States.

In the Division of Reptiles, important gifts were 115 living reptiles, together with vivaria and aquaria, from the Davis Dry Goods Company of Chicago; 150 specimens from Panama, presented by Dr. W. C. Allee of the University of Chicago; 3 salamanders from Robert B. Elkvall of Kansu, China; 78 salamanders from E. B. Steen and B. B. Crane of Wabash College; and two paratypes of a Santo Domingan tree frog from the American Museum of Natural History.

Although no expeditions especially seeking reptiles were in the field, considerable accessions of this group of animals were received from expeditions having other things as their primary object. The Captain Marshall Field Expedition to Chile contributed 491 specimens, the Captain Marshall Field Geological Expedition to Brazil and Argentina 44 specimens, and the Captain Marshall Field Expedition to Texas 55 specimens. Chinese reptiles to the number of 158 were accessioned, being the first installment of a division of the collections of the Third Asiatic Expedition of the American Museum of Natural History. These specimens are from collections already made by the Expedition, and are being received in partial exchange for the work of Assistant Curator Schmidt in preparing a scientific report on them. Therefore, they are not necessarily concerned in any division of subsequent collections of the Third Asiatic Expedition under the cooperative agreement.

Accessions of fishes were 955 specimens, not a large number for this group of animals, but the proportion that is especially preserved for exhibition purposes is unusually large. The Captain Marshall Field Expedition to Texas obtained no less than 121 skins and casts from fresh examples, including several species of sharks, rays and other fishes of large size. These will make it possible to place in the exhibition series excellent examples of several groups of fishes which are not now available for exhibition, or are only poorly represented. Many of the casts have a high scientific value because the method of casting retains structural details in perfect condition for study. Through the courtesy of the Booth Fisheries Company, a cast was made of an exceptionally large Lake Sturgeon. This will make it possible to compare specimens of about equal size of the Lake Sturgeon, which practically loses its bony armor with age, and the Atlantic Sturgeon, in which this armor is fully developed at all ages. Specimens of fishes were presented by the Davis Dry Goods Company, by the Lincoln Park Aquarium and by Dr. W. M. McCarty of Des Moines, Iowa. Small but important lots of fishes were obtained by purchase and exchange from New Jersey, Maryland and Florida.

Of the 3,876 insects accessioned, two-thirds consisted of exotic species. The largest and most noteworthy acquisition was a purchase of

2,160 insects of various orders from British New Guinea, the majority of them belonging to species new to the collections. Of special interest were several specimens of the largest known katydid, an insect five inches in length and having a wing expanse of nine inches. A welcome gift of 226 butterflies from Belgian Congo was received from Maj. A. M. Collins of Philadelphia. From the United States and Canada, gifts of insects included 135 butterflies and moths from Dr. C. E. Hellmayr, 175 miscellaneous insects from Mr. A. B. Wolcott, and 45 especially desirable and rather rare butterflies and moths from Dr. William Barnes of Decatur, Illinois.

EXPEDITIONS

ANTHROPOLOGY.—The operations of the Field Museum-Oxford University Joint Expedition to Kish, Mesopotamia, have been continued this year, apparently with good results. The expedition has been at work this season since October 8th, and has made progress with the fine Sumerian palace and the tablet hill. The discovery of more fragments of the fine inlay work found last year is reported by Ernest Mackay, field director and excavator, and some tablets have been recovered from Mound "W."

BOTANY.—While in Florida during the year, Dr. B. E. Dahlgren visited the Ten Thousand Islands region on the lower west coast of the peninsula. Through the generosity of the Florida West Coast Railway and Navigation Company, which placed a tug at his disposal, he was able to visit Cape Sable and the Big Mangrove at the mouth of Shark River. Some subsequent collecting in the Florida Keys yielded a number of interesting items for the Hall of Plant Life.

During five months of the year the Museum's collector in Guiana continued the collection of woody plants, particularly forest trees. His wood-specimens associated with accompanying herbarium material will make it possible to study and to assign a definite botanical status to many species of tropical woods hitherto known only by vernacular names.

GEOLOGY.—Field work of the Department of Geology has been confined during the year to that carried on by the Captain Marshall Field Expedition for Vertebrate Paleontology. The work of this Expedition has been throughout the year in Argentina and Bolivia.

In the early part of the year, studies of and collections in the geological formation known as the Desendo were carried on by the Expedition. Having finished with the locality of Colube Huapi, mentioned in last year's report, scouting parties were pushed northward to Rio

Chubut and northwestward through the San Bernardo range to the River Senguer, in quest of new collecting grounds.

Various small and isolated deposits of fossil mammals were discovered. Some weeks were spent in exploring the San Bernardo Hills, where dinosaurs of Cretaceous age were found in three localities. Out of deference to the Museo de La Plata, which was carrying on research in the dinosaurs of Argentina, no collections of these fossils had hitherto been made. To preserve a record of this new field, a few representative specimens of Cretaceous dinosaurs were here collected. A representative of the Museo de La Plata visited the Expedition and was allowed to make studies of these specimens and of the formation in which they were found.

The collections were brought together at Colonia Sarmiento and then packed and forwarded to the Port of Comodoro Rivadavia. The heavier equipment was also forwarded to that port and preparations made to move southward to better known collecting grounds. Some reconnoissance was made in the vicinity of Los Heras, Santa Cruz, after which the party proceeded to the coastwise exposures south of the Gulf of St. George. At Punta Casamayor some collections were made of the earliest known fossil mammals of South America. The classic locality of Punta Nava was also visited, after which the party proceeded to the richer fossil beds at La Fleche, an inland basin south of the Rio Deseado. The months of March and April were spent in making collections from these localities.

New fossil-bearing localities of the Deseado formation were discovered near Pico Truncado and near Cerro Madre y Higa. A fossil pine forest with tree trunks standing and prone, and with fossil pine cones and branches associated, was discovered in the Patagonian Beds near Cerro Madre y Higa. A valuable collection consisting of more than one hundred fossil pine cones and an equal number of specimens of associated fossil pine twigs, roots and branches was here made. The collections from the widely separated localities in the Territory of Santa Cruz were then forwarded to the Port of Deseado and made ready for shipment.

Owing to the approach of the southern winter, it then became necessary to move northward. Snow and difficult roads were encountered on the high pampas of Chubut, but Collectors Sternberg and Abbott reached Buenos Aires in time to make connections for their return to the Museum.

After the arrival of Associate Curator Riggs at Buenos Aires, the formality of inspecting the collections according to Argentine law, was

carried out before a committee of museum directors and curators at the National Museum of Buenos Aires. The entire collection was taken to the museum, unpacked and the greater part of it unwrapped and displayed. Certain specimens were held on the grounds of being new to the local collections; others were detained to be studied and duplicated in plaster, with a promise of being later restored to Field Museum. The entire collection was then repacked in 51 shipping cases and freed for exportation. It was then shipped to the Museum, as were also 6 packing cases containing Indian skeletons and artifacts, skins and skeletons of birds and mammals, bird's eggs, specimens in formalin, pressed plants and photographic negatives, all collected or made by the Expedition.

The third and fourth field problems undertaken by the Expedition were to find profitable collecting grounds in, and to make collections of fossil mammals from, the Pliocene and Pleistocene deposits of Argentina and Bolivia. In pursuit of this purpose and while awaiting inspection of the collections, a trip was made to the city of Parana in company with Sr. Alberto Lelong, and a reconnoissance of some thirty miles along the banks of the Parana River carried on in quest of profitable collecting grounds. Because of rising waters in the river, however, it was found that the locality could not be profitably worked at that time.

In order to carry on the work of collecting, it was then found necessary to move northward to a more favorable climate. Accordingly, the Expedition proceeded to Tarija, Bolivia, which was reached near the end of July. A promising collecting ground was soon discovered, and a party of native laborers under the direction of Sr. Jose Strocco was employed. Work was continued until the end of November, when the approach of the season of torrential rains made further collecting impracticable, but during the period when work could be done a large and valuable amount of material was secured. This was packed in 34 cases, most of which were too heavy to be transported by pack animals. The rains having made roads impassable for vehicles, transportation of this collection to the railway was deferred until the close of the rainy season.

Preparations for resuming collecting in the vicinity of Bahia Blanca, Argentina, were then made. The equipment was shipped to that point, the motor cars were made ready for service and all was placed in storage to await resumption of the work of the Expedition.

The results attained by the Expedition during the year may be summarized as follows: From the Cretaceous formations, 3 specimens

of dinosaurs; from the Deseado formations, 229 specimens of fossil mammals, 4 of fossil birds, 3 of fossil fish, and 3 of fossil plant impressions; from the Patagonian Beds, 430 specimens of fossil shells, and 246 of fossil pine cones, branches and roots; from the Pliocene formations, 114 specimens of fossil shells, and from the Pleistocene formations, 121 specimens of fossil mammals and one of fossil birds. The majority of all these specimens are entirely new to the Museum collections. Twenty lithological and mineral specimens were collected, as were also 19 archeological specimens, including celts, potsherds and other artifacts, 50 pressed plants, 14 lizards in formalin and 3 skulls of modern mammals. One hundred and eighty photographic negatives and 11 five-meter cinema films were made.

Other results attained consist of field notes, geological sections and maps, and many data bearing on fossil-bearing localities, which will be of value in guiding future work.

ZOOLOGY.—The zoological expedition to Central Africa, which was despatched late in 1923, remained in the field throughout 1924 and, with some changes in the personnel, is continuing into 1925. This expedition, which was organized under the joint auspices of Captain Marshall Field and Major A. M. Collins, was conducted at first by Maj. Collins and Assistant Curator Heller of the Museum staff, with the assistance of Mr. T. A. Barns. On July 10, Mr. Barns severed his connection with the expedition and, about two months later, Maj. Collins started on his return to the United States, leaving Mr. Heller still in the field where he was joined late in the year by his wife, Hilda Hempf Heller, who will assist him in continued work in 1925.

During 1924, the party worked, principally, in the eastern part of Belgian Congo in or near the great rain forest of central Africa. They arrived at the port of Dar es Salaam January 3, and went inland by rail to Kigoma on Lake Tanganika and thence to Usumbura. Here they employed a short time in a trip to the edge of the forest to the northeast and obtained a small number of interesting animals, including several species of monkeys, a white forest hog and a yellow-backed duiker-buck. Thence they went to Lake Kivu and in mountains northeast of Kissenyi obtained their first specimen of the Chimpanzee. From Kissenyi, they organized a safari and traveled westward down into the heart of the Congo forest in quest of great apes, especially Gorillas. Three days' march beyond the village of Walikali and a very long distance from the preserve established by the Belgian government, they found Gorillas and obtained two specimens, this being the limit per-



QUEEN CRAPEMYRTLE (*Lagerströmia speciosa*),
A REPRODUCTION OF A FLOWERING AND FRUITING BRANCH
IN THE HALL OF PLANT LIFE.
(STANLEY FIELD LABORATORY).

mitted by the Belgian authorities. One of the specimens was a very large old male weighing 350 pounds and having an arm spread of over 90 inches, one of the largest Gorillas ever recorded. In the same region a number of Chimpanzees, various species of smaller monkeys and other rare animals were obtained. Returning from Walikali to the mission of Katana on Lake Kivu, the expedition passed through country inhabited by hostile tribes and suffered the loss of three of its native bearers who were murdered in cold blood.

After some weeks spent in Kissenyi, the party proceeded via Amakona and Beni to Irumu in the district of Ituri. Here Maj. Collins had some successful elephant hunting, and Mr. Heller devoted himself to general collecting until the arrival of Mrs. Heller late in the year. Among interesting specimens obtained in this region were several of the small red forest buffalo. At the end of the year a large consignment of specimens had been despatched to America but at this writing have not reached the Museum.

The Captain Marshall Field Chilean Expedition continued to have one representative, Mr. C. C. Sanborn, in the field until August, 1924. After working in the north under favorable climatic conditions, he returned to south central Chile in order to make trips into the Andes which had previously been impractical on account of heavy snow in the passes. Two and a half months were spent in crossing the Andes via the Longimani Valley and over the border into Argentina. Much valuable material was secured here, and Mr. Sanborn then returned to the northern provinces, visiting Caldera and Gatico on the coast and then going inland to high altitudes east of Antofagasta. Further work was done at Pica in the Province of Tarapaca and at Arica, the northernmost port of Chile. Work was then concluded with several weeks spent in high mountains on the Bolivian border inland from Arica. The total Chilean collections of this expedition, all of which have now been received at the Museum, amount to 1,105 mammals, 1,437 birds, 1,300 reptiles and amphibians and, in addition, various insects, fossils and anthropological material. Since very little well-organized work had been done previously in Chile, this is doubtless the best collection of Chilean vertebrates in existence. It has not yet been carefully studied, but among outstanding novelties four new species of birds and a new genus of mammals have been described in the publications of the Museum.

An expedition of two months duration was made during the summer to the Gulf of Mexico on the coast of southern Texas, the particular object being subtropical fishes, especially sharks and rays, for exhibi-

tion purposes. This was conducted by Assistant Curator Weed and Taxidermist Pray who cooperated in selecting suitable material, in taking color notes, measurements, and miscellaneous data for subsequent use in the preparation of the specimens for exhibition. The larger fishes were mostly cast in plaster from freshly caught examples, thus preserving the most minute details of their form and structure. No less than 121 plaster casts and dried skins of fishes, mostly of large size, were secured. Included were twenty casts of sharks of various sizes and representing at least six species. There were also casts of 10 rays belonging to the species known as Cow-nosed Rays, Leopard Rays and Butterfly Rays. In addition to the fishes, the expedition brought back 20 mammals, 93 birds, 55 reptiles and about 850 insects.

Besides the foregoing regular expeditions under the auspices of Captain Marshall Field, a semi-official zoological expedition of considerable importance was conducted by Mr. H. B. Conover, Associate in Ornithology. In cooperation with Mr. Herbert Brandt of Cleveland, Ohio, and a party from the U. S. Biological Survey, Mr. Conover went to central Alaska and, after a winter trip of 800 miles with dog sleds, reached the Bering Sea coast in the vicinity of Hooper Bay near the delta of the Yukon River. Here the early spring and summer months were spent in collecting specimens of the many rare species of waterfowl which have this remote region as their breeding ground. Certain parts of the collection made have been presented to the Museum, and the remainder, including many rare species and an especially valuable series of nestling and immature-plumaged birds, are deposited in Mr. Conover's collection where they are available for reference by the Museum staff.

The following list indicates the various expeditions in the field during the year, all of which are partly or entirely under the auspices of Captain Marshall Field:

| Locality | Collector | Material |
|---------------------|--|-----------------------------|
| MESOPOTAMIA..... | S. H. Langdon and E. Malxy | Archaeological Collections |
| ARGENTINA..... | Elmer S. Riggs, | Paleontological Collections |
| BOLIVIA..... | J. B. Abbott, and G. P. Sternberg | |
| CHILE..... | C. C. Sanborn | Mammals, Birds and Reptiles |
| CENTRAL AFRICA..... | A. M. Collins Edmund Heller, and Hilda H. Heller | Mammals |
| TEXAS..... | A. C. Weed, and L. L. Pray | Fishes |
| BRITISH GUIANA..... | A. C. Pennard | Tropical Woods |

INSTALLATION, REARRANGEMENT AND PERMANENT IMPROVEMENT

ANTHROPOLOGY—The activities of the Department of Anthropology were equally divided during the year between the installation of new exhibition material and the arrangement of study, exchange and storage collections on the third and fourth floors and in the storage-room on the ground floor. A total of sixty newly installed cases were placed on exhibition during the year.

Prompted by the desire to render accessible to the public the results of recent expeditions, several notable additions and changes have been made in Stanley Field Hall. At the south end of this hall were placed two standard cases (23 and 24) of brown mahogany. The exhibits illustrate state robes and other court paraphernalia of the extinct Manchu dynasty of China. These articles were secured by the Curator during the Captain Marshall Field Expedition to China in 1923. One of the cases contains an imperial costume of yellow silk tapestry, as worn by the emperors of the Manchu dynasty on ceremonial occasions; a sacrificial robe embroidered on yellow silk and worn by the emperor during worship or at the performance of sacrifices; the state robe of an empress, of yellow silk embroidered with eight five-clawed dragons in gold; and the state robe of a Manchu prince, of blue satin likewise embroidered with dragons. These four costumes come down from the K'ien-lung period (1736-95). In the case on the opposite side are displayed the ceremonial robe of an empress, of midnight-blue silk with buttons carved from amber, the dress of a lady of the Manchu aristocracy, head-dresses of Manchu princesses formed by a combination of jade, coral, rose-quartz, pearls, and blue kingfisher feathers inlaid in silver, the velvet hat of an empress, satin hats and caps of princes, a yellow silk belt with white jade carving worn by the emperor, and five silk belts of different colors with jade buckles worn by the princes, as well as fans used by palace ladies on ceremonial occasions. One of these is a marvel of technical skill, being plaited from ivory threads held by a tortoise-shell rim and overlaid with colored ivory carvings of lilies, peonies, asters, and butterfly. Another court fan is of red silk tapestry in which fungus and orchids are woven in colors; it has an ivory handle on which the eight figures of the Immortals are engraved. String bags from New Guinea were removed from Case 16 of Stanley Field Hall and replaced with fabrics and examples of metal ware selected from the collections of the Arthur B. Jones Expedition to Malaysia, 1923. A royal sarong of red silk brocade with geometric design in gold threads, worn by the late Sultan

Idris of Perak on the occasion of his last marriage (illustrated in last year's Report), and a bridal mat embroidered with floral designs in gold threads, on which the bride and groom sit in state during the wedding ceremony to receive the congratulations of their friends, testify to the accomplishments and skill of the Malayan artisans. No less interesting is the process of inlaid silver wire in the belt buckles as well as the fine filigree work in the women's ear-studs and breast-ornaments. Jewelry, silver pillow-ends with gold mountings, a fine kris, and a betel-nut set are also shown in this case. Case 20 in Stanley Field Hall was stripped of American basketry and utilized for the display of a selection of antiquities secured by the Field Museum-Oxford University Joint Expedition, representing the first results of the excavations carried on on the site of Kish, the oldest capital of Mesopotamia. The principal exhibits in this case are a series of fine necklaces consisting of lapis-lazuli, rock-crystal, agate, and carnelian beads, jewelry in the shape of copper, silver and shell rings as well as silver bosses, stone and bone implements, flint saws, copper and iron weapons and tools, copper and silver dishes, cylinder seals of shell, hematite, and calcite engraved with interesting designs, clay figures and plaques, a large inscribed brick recording the restoration of the temple of Ilbaba, god of Kish, of the eleventh century B.C., inscribed clay cones and tablets, the reproduction of the only stylus for writing ever discovered, a series of pottery vessels glazed and unglazed, and pottery sherds with stamped and incised designs.

A Persian embroidered tent made for the Sultan Aga Mohammed Shah (1785-97) was loaned by H. H. Topakyan, Vizir of Persia, and temporarily exhibited in Stanley Field Hall.

A feat of technical engineering is represented by the reconstruction of the two Mastaba tombs from Egypt in Hall J, which were completed and opened to the public in October. They were excavated at Sakkara, the necropolis of ancient Memphis. One, the tomb of Unis-ankh, of the sixth dynasty (2600 B.C.), was presented by Mr. Martin A. Ryerson. The other, the tomb of User-neter, of the fifth dynasty (about 2700 B.C.), is a Museum purchase. The blocks of these two tombs reached Chicago in May, 1909, in 206 large cases weighing 96 tons. The work of building up the tombs was placed in charge of the Superintendent of Maintenance, who acquitted himself of this difficult task with great ingenuity, after patient and careful study of the technical problems involved. The more prominent features of the work may briefly be placed on record, in the hope that the information may prove useful to other institutions confronted with a similar task.

The lower courses of the stone slabs, to an average height of one meter, were not shipped to Chicago, as they were devoid of carvings, and were replaced with pre-cast cement blocks and channel steel framework. Wherever stones were missing in the upper courses, these were also replaced with pre-cast cement blocks. In order to prevent moisture coming into contact with the original stones, the replacements were dried and seasoned before the walls were laid up. In lieu of mortar the stones were bedded in lead strips a quarter inch thick, each stone being connected with the adjoining stone by dowels both on the horizontal and vertical joints and with additional metal clamps on the upper side of each course. As it is desirable to have the backs of the stones visible and accessible, each block is secured to a bracketed upright steel channel. As there is little uniformity in the sizes of the blocks or regularity in the courses, each stone is bracketed and anchored with especially devised connections. This was a difficult task, for it was essential to avoid cutting away the backs of the stones or changing in any way their appearance. The illumination of the interior was effected by raising the ceiling 18 inches above the walls and placing the lights in a trough back from the face of the wall, so that they are not visible from the ground. Large view glasses are provided in such a way that visitors can walk into one chamber of each tomb. For a more intimate observation on the part of students, doors are provided so that it is possible to walk through the chambers. In the rear, the two tombs are sealed with a wall set 18 inches away from the stones and providing a passage-way completely around both tombs and furnishing access to the backs of the stones. The room back of the tombs is mechanically ventilated, and the arrangement of the lighting overcomes any possible tendency to humidity on either side of the stones.

The following data may also be of interest. The height of both tombs to the top of the walls averages 11 feet. The main chamber in the tomb of User-netjer is 12 feet long and 5 feet, 9 inches wide; the ante-chamber is 12 feet in length by 5 feet in width. The main chamber in the tomb of Unis-ankh is 17 feet long and 6 feet wide, while the ante-chamber is 8 feet, 8 inches by 5 feet. The stele in the same tomb is a monolith and weighs a little less than 7 tons. The stele in the tomb of User-netjer is in seven pieces and weighs about $4\frac{1}{2}$ tons.

Fifty of the miscellaneous Egyptian tomb-sculptures from Gizeh and Memphis, extending from the late third to the twentieth dynasty, were framed under glass and placed on the pilasters of the Egyptian Hall (J). Most of the sculptures have been provided with labels re-

vised in the light of recent research. A reproduction of the famous Rosetta stone was likewise added to the exhibits.

Six cases were installed in Ayer Hall by Assistant Curator Owen: one of Etruscan wine-jars, one of Etruscan bronzes, two cases of Etruscan cinerary urns; one case of vases from southern Italy, and one of Greek bronzes. Re-installations were made in several other exhibition cases, and a general rearrangement of the cases in the Hall was made.

Repeated additions made by Mr. Edward E. Ayer to his collection of pewter housed in Hall 23 at the north end of the second floor entailed a complete re-installation of the Ayer Pewter Collection last June. It is now arranged in eleven cases as follows: Cases 1-2 contain trays, communion and other plates from England, Germany, Holland, Austria, and Bohemia. In Cases 3-4 are exhibited lamps, candlesticks, flagons, flasks, tea-pots, milk-containers, plates, tureens, mugs, tankards, and guild-cups of Germany. In Case 5 are displayed examples of candlesticks, lamps, jugs, flasks, ewers, tea-pots, milk-pitchers, dishes, cups, and plates of England and France. Case 6 is devoted to tea-pots, trays, boxes from China, with a few tea-pots from Japan. It comprises a remarkable series of tea-pots of all imaginable forms with handle, spout and cover-knob of jade; those with body mounted on carved coconut-shell and fine bamboo plaiting are also rare pieces. Case 7 contains Chinese chafing-dishes, fruit-dishes, finger-bowls, wine-cups, and a set of 62 objects constituting the dower of a well-to-do Peking bride. Case 8 illustrates Chinese devices of illumination in the shape of four candelabra, an excellent series of figures representing the Eight Immortals combined with candlesticks, three different forms of the Twin Génii of Harmony and Union treated in the same manner, and other candlesticks with representations of dragons, stags, cranes, and lions. Case 9 is likewise given over to China with a notable sacrificial lamp inlaid with designs and figures in brass, of the Ming period (about sixteenth century), two figures of a water-buffalo with a boy playing a flute astride, several other cast figures, tall ewers and tea-pots, and three sets of altar-pieces used in ancestral worship. Case 10 contains a baptismal basin made in Germany in 1717 and decorated with an etched design of John the Baptist baptizing Christ in the Jordan. In Case 11 are on view exceptionally fine tea-canisters from Japan (eighteenth century), two from China of the K'ang-hi period (1662-1722), and the Han dynasty pewter tablet described on p. 289. The installation is now complete, save 18 pieces acquired during the last few months.

Five cases of new exhibits were added to the Hall of Oriental Theatricals (Cases 29-33, Hall I, ground floor). They contain the actors' costumes obtained last year by the Curator in Peking. At that time Peking actors and actresses posed for him in these costumes before the camera, a characteristic scene or posture being selected for each, as prompted by the play in question. On the basis of the photographs thus secured Chinese students at the University of Chicago were picked and, as far as possible, matched for the characters they were to impersonate. Casts of their faces and hands were taken by the modeler in the department's modeling section. From these casts the heads, faces, and hands were modelled, and special attention was devoted to a life-like reproduction of the skin color. The figures were posed exactly as shown in the photographs, resulting in an accurate representation of the original stage-picture. In the previous theatrical exhibits it was mainly the religious and mythological drama of the Chinese that was emphasized. With the new additions all the principal varieties of stage-plays are shown: civilian, military or historical, and dance performances. The new exhibits are also instructive in presenting a contribution to the history of costume and permitting one to study the styles of the T'ang and Ming dynasties. Thus Yang Kwei-fei (Case 33, Hall I), a celebrated court-lady of the eighth century appears in a dress peculiar to the T'ang dynasty; and T'siu Hu, the hero of the play, "The Meeting in the Mulberry-Garden," is garbed in the characteristic apparel of the old-time scholar and official, which prevailed under the Ming. Of the numerous historical plays, the story of the Three Kingdoms is still the most popular, and in view of the fact that the best there is in Chinese character is typified in the great figures of the national heroes who form the backbone of that historical romance, it seemed appropriate to include them in this series of favorite casts. The three brothers-in-arms, Kwan Yü, Liu Pei, and Chang Fei, who were bound by a solemn compact to fight and die together, are grouped in Case 29, while in the adjoining Case 30 appear the powerful hero Chu-ko Liang and the knight-errant Chao Yün. In the same case is placed on exhibit the figure of a militant heroine in martial dress, carrying four flags on her back as a symbol of military rank. Large pheasant feathers adorn her head-dress. In striking contrast with these exponents of warlike activity stands on the opposite side the mild goddess Ma Ku, engaged in the performance of a sacred dance which will initiate her into the mysteries of immortal life among the gods of the Taoist paradise. The flowers (made of silk) which she carries in a basket over her shoulder are emblematic of the blessings she has in store for mankind.

Three cases were added to the Chinese collections in Hall 24 (east gallery), one of feather and gauze fans, one of writing-materials, and one illustrating the use of tobacco and smoking utensils. The exhibit of writing-materials includes all the manifold varieties of brushes for writing, drawing, and painting, artist's pigments, ink-cakes (ancient and modern) adorned with fine engravings, palettes, ink-stones and all implements used on the desk with specimens of letter-paper and envelopes. The imperial letter-paper used by the emperors of the Manchu dynasty is a special feature of the exhibit. The contents of the case illustrating the use of tobacco in China is fully explained in Leaflet 18: it contains good series of long-stemmed pipes for dry tobacco, water-pipes of all descriptions from Shanghai, Suchow, Hangchow, and Canton, opium-pipe and opium-smoker's outfit, a fine series of old snuff-bottles, and samples of tobacco-leaves and snuffs.

Three cases were installed with Chinese baskets and lacquer ware, and another with ivory carvings. These will be placed on exhibition shortly. The fact that China has also produced artistic basketry and that old baskets going back to the eighteenth century are still obtainable, was hitherto unknown. The exhibits include baskets of high quality from almost every locality of central and southern China where this industry still flourishes. Among the lacquers will be found many rare and fine examples of early carved lacquer of the Ming period as well as lacquers painted with landscapes or inlaid in mother-of-pearl of the K'ang-hi and K'ien-lung periods.

The two dressed figures of Japanese women presented by Mrs. Koshichi Tsukamoto are exhibited in Frank W. Gunsaulus Hall (Case 10). The remarkable Japanese suit of armor presented by Miss Adele Barrett, on account of its dimensions, could not be accommodated in a standard case, but it is accessible to students interested in the subject. The exhibitions of Surimono were changed four times during the year according to plan.

Thirty-one cases were installed during the year by Assistant Curator Linton. Eleven of these, illustrating the ethnology of the Northwest Coast and Plateau tribes, have been placed on exhibition in Halls 3 and 4. Of the remaining twenty cases, fourteen represent the ethnology of Polynesia and six that of Micronesia. They have been placed in Hall F on the ground floor, which it is planned will be opened during the coming year as a Hall of Polynesian and Micronesian Ethnology. Most of this material will be exhibited for the first time. It is proposed that the western end of the new hall will be occupied by a remarkable Maori council-house, the only one of its kind in America.



TYPE OF CASE LOANED TO THE SCHOOLS OF CHICAGO BY THE N. W. HARRIS PUBLIC SCHOOL EXTENSION OF
FIELD MUSEUM OF NATURAL HISTORY.

One-sixth actual size.



It is a large, finely carved structure fourteen feet high and nearly sixty feet in length. This part of the hall will also contain a number of cases picturing the life and culture of the Maori of New Zealand. The southeastern quarter of the hall will be devoted to other parts of Polynesia and to Fiji. The northeastern quarter is to contain exhibits from the various Micronesian groups and from certain small islands on the eastern edge of Melanesia which are essentially Micronesian in culture.

Two cases were installed by Assistant Curator Lewis, and have been added to Joseph N. Field Hall: one illustrates the ethnology of the Admiralty Islands, the other shows clothing and ornaments from Huon Gulf, New Guinea.

A series of colored photographs made and loaned by Mr. L. Winternitz was temporarily exhibited this summer until August 8. They illustrated scenery, plant-life, and types of the Seminole Indians of Florida.

A poisoning and storage room for the preservation of perishable material was constructed of compressed steel at the south end of the fourth floor, and in its essential features was completed toward the end of 1923. In the beginning of 1924 it was equipped with storage bins, cedar wood being the only lumber employed. The distribution of the five rooms from east to west is as follows: Room 1 serves for the laying-out and cleaning of specimens. Room 2 contains fabrics, costumes, and other perishable material from India, Tibet, China, and Korea. Room 3 is set aside for material from California, Southwest, Mexico, and South America. Room 4 shelters material from the Plains Indians and Northwest Coast, and Room 5 collections from the South Sea Islands. Formaldehyde candles have been used for purposes of poisoning with good success, and the entire arrangement and equipment of the poisoning room may be characterized as eminently satisfactory. It insures with absolute safety the permanent preservation of destructible material.

Storage racks were constructed during the year for Rooms 28, 30, 34, and 36 on the third floor. The distribution of study collections is now as follows: Room 28 serves for the accommodation of material suitable for exchange, so that those interested in examining what the department has to offer in the line of duplicate specimens may have ready access to them. Polynesian and Micronesian collections not required for exhibition are stored in Room 30, which also contains overflow material from Africa and Australia. Room 31 harbors collections from India. In Rooms 33 and 34 are stored collections from

the Northwest Coast. The Philippine collections in Room 36 were entirely rearranged by Assistant Curator Linton. Material from Sumatra, Borneo and Java formerly in Room 34 was transferred to Room 36, where now all Malayan collections are grouped together. Rooms 65 and 66 contain collections from China, Tibet, and Korea. All this material is properly grouped and classified, and is arranged in such a way that it can easily be located and taken out upon demand. A large room on the ground floor has been assigned to the department for storage purposes. It will ultimately absorb all American archaeological material, as far as not required for exhibition. In view of the fact that a hall of North American archaeology is planned on the ground floor, it is thought that in this manner the entire archaeological collections of this continent will be kept conveniently together.

A special label-card has been devised for the identification of study and storage collections. Each card indicates country, stock and tribe with a brief enumeration of the material in question, the room where it is located with the number of rack or shelf being given in the upper left corner. The size and form of the catalogue-cards (about 3 x 6 inches) has been chosen for these labels, and several copies of each card are printed. One is attached to the shelf in the storage-rooms, the others are kept on file in the Curator's office, and when completed will serve as an index and finding list of the study-collections. This card-index will be arranged in triple form, according to localities, tribes, and material, and will be of assistance in locating any collection on which a demand may be made for study. The work performed on the storage of collections made heavy demands on the time of the staff and the preparators, as numerous exhibition-cases in which they were piled up heretofore had to be opened and emptied, and all material cleaned, sorted, and identified. The storage of Northwest Coast and American archaeological collections was begun, but not completed.

In the Modeling Section the large house and two coconut palms for the model of the New Guinea village were completed. Ten casts of faces and as many pairs of hands were taken by the modeler from Chinese students, modeled and colored for the costumed actors' figures from Peking, and now on exhibition in Hall I. The presence of a Sioux Indian in the city afforded an opportunity of having casts taken of his face and hands. There were 174 specimens repaired. Material in fifty exhibition-cases was poisoned during the year. Twenty papier-maché forms for the exhibition of costumes were made and 12,528 numbers were marked on specimens.

BOTANY.—In the Department of Botany all of the exhibition cases were refinished during the year in a dark walnut color, greatly improving the appearance of the halls. New installations and reinstallations were confined to the Hall of Plant Life, where the backgrounds are being changed as fast as possible from black to a light color. Reinstallations are being made by the removal from this hall of a large part of the strictly economic material to provide space for the reproductions of plants and other exhibits of more distinctly botanical significance. Many additions were made to the latter exhibits during the year. Of native plants there were added reproductions of Blue Phlox, Trillium and the Shooting Star. For the remainder, the various new exhibits grew mostly out of the collections of the Stanley Field Guiana Expedition of 1922. Among these, the Cannon-Ball Tree was completed early enough in the year to be illustrated in the last annual report. The other most important additions are a large specimen of a Banyan-like fig tree, *Ficus Benjamina*, and a group of *Victoria regia*. The former, although an Indian species, is more or less widely grown in warm countries and is plentifully represented in the Georgetown Botanic Gardens, where a trunk was secured through the kindness of the Superintendent and of the Director of Agriculture of British Guiana. This trunk in its fresh condition weighed approximately a ton, but is now dry and light enough to be moved easily by two men. Like the banyan and other figs on the rubber-plant order, it is remarkable for its masses of pendent aerial roots. With leaves and fruits replaced, it should prove to be an object of great interest in the hall.

The *Victoria regia* group also furnishes a new exhibit of a striking character. This famous South American Water-lily forms one of the chief attractions of the Georgetown Botanic Gardens, where abundant opportunities are afforded for its study. A mould of one of the huge leaves in a canal was made by covering the floating leaf with thin coatings of plaster until it was sufficiently reinforced to allow the entire leaf to be lifted from the water without deformation, after which the mould was completed on land. It was broken into four pieces for convenience of packing and transportation. Reassembled two years later in the Museum, it has served for the production of the large leaves in the group. Moulds of the flowers were also made where they grew. The final work on this group has just been completed. With its large leaves, spiny buds and large showy flowers in the various stages of expansion characteristic of them on successive days, this gigantic aquatic makes a conspicuous addition to the collection of plant forms represented in the hall.

A reproduction of a flowering branch of a *Barringtonia*, an East Indian tree, also from the Georgetown Botanic Gardens, has been made and installed with the other exhibits of the Monkey-pot family.

To represent the flowering structure and other botanical features of the Lace-bark Family, a flowering branch of the splendid *Lagerstroemia speciosa* "the queen of flowers," has been reproduced. This also was prepared from material secured by the Stanley Field Guiana Expedition.

The Cactus exhibit has been increased by the addition of a flowering and fruiting branch of a *Pereskia* the Barbados Gooseberry, a leafy representative of the Cactus Family, particularly curious on account of its leafy fruits.

A flowering and fruiting branch of the Cashew, *Anacardium*, adds another type of edible fruit to the collection in the Sumach Family which includes such diverse plants as poison-ivy and mangoes. The Cashew is often described as a fruit with its seed hanging on the outside, its fleshy portion being formed by the enlargement of the flower-stem and not extending to envelop the seed, the well-known Cashew nut.

The exhibit of Spurgees, already illustrated by a Castor Bean plant, has received an addition in a flowering branch of a cactus-like *Euphorbia*, the so-called Sweet Aloe.

A flowering branch of an African *Combretum* with its red flower cluster faithfully reproduced in glass, together with a single enlarged flower, has been added to the exhibit of the *Combretum* Family and serves to illustrate its floral characters.

The room vacated by the transfer of the departmental library has been made the Cryptogamic Herbarium and the collections of lower plants have all been put in order and installed there. One of the most notable single accessions among these is the E. T. & S. A. Harper Collection of Fungi, which is now completely labeled, ordered into genera and catalogued. This work on the Harper Collection was done by Miss Grace McCrone who was attached to the staff for several years for this special purpose. The collection comprises about 23,500 specimens, and 5,500 photographs, among them many stereoscopic, some of which are direct enlargements; the whole now for the first time entirely available for reference. The collection includes 10,248 numbers, particularly of fleshy fungi collected by E. T. Harper and, in addition, many standard series, e. g. Fungi Columbiana 5,324 numbers; Rabenhorst-Winter Fungi Europaei 1,849; Otto Jaap, 1,254; Phycotheca Boreali-Americana 2,713; Ellis & Everhart 420; C. L. Shear N. Y. Fungi 302; Torrend 302; Central American Fungi by C. L. Smith 224; E. Ule Mycotheca brasiliensis 143.

In response to the general interest in the native wild flowers an experiment was made early in the spring with an exhibit of living plants. These were planted in a case built on the order of a large-scale flower-box, installed in the Stanley Field Hall. The plan proved to be practicable and was successful from the beginning. The plants survived transplanting and most of them appeared to thrive fairly well under the overhead light in the large central hall. A few, however, such as the Spring Beauty, refused to open their flowers in the absence of direct sunlight.

With the advance of the season, the case constructed was found to be inadequate for the display of the increasing number of plants coming into bloom. A larger case four times the size of the first one was therefore built, which was large enough to permit of an approximate ecological arrangement of the plants. One corner of the case, with a somewhat elevated sandy ground, was made to serve for the sand-dune plants, an adjoining quarter, with better soil, was assigned to plants of dry woods, a lower quarter, surrounding a pool, served to accommodate moisture-loving vegetation, and the pool itself being devoted to aquatics. One end of the box, with heavier soil, provided suitable space for prairie plants.

By bringing in fresh plants several times each week this indoor exhibit was maintained constantly in fresh condition, and kept pace with the progress of vegetation in the country surrounding Chicago. About five hundred species were shown during the season. No labels in the Museum were more thoroughly inspected than those giving the names of the plants in the Wild Flower bed.

In connection with the Wild Flower exhibit, a series of illustrated leaflets were prepared, dealing in a non-technical manner with the common plants of this region. Four of these have appeared to date, Spring Wild Flowers, Spring and Early Summer Wild Flowers, Summer Wild Flowers, and Autumn Wild Flowers and Fruits.

The study of the Peruvian Collections, secured on the Captain Marshall Field Botanical Expeditions of 1922 and 1923, has been carried on with the generous coöperation of specialists on various plant families or groups. The results of this work are appearing in botanical magazines and institutional publications, and will be brought together under one cover upon the completion of the Peruvian exploration work by this Museum. Although only about one-half of the collections have been studied, a large number of undescribed species have been disclosed, some specialists reporting forty per cent of the material examined by them as representing undescribed plants. The type, that is, the original specimen of each of the novelties, has been placed in the Museum herbarium, the specialist naming the species retaining for his institution the dupli-

cate material when such exists. As a consequence, the herbarium of Peruvian plants is unusually rich in type specimens, making it one of the most valuable of its kind in the world. It is equalled only by the Peruvian collections at Berlin, which include those made by Dr. A. Weberbauer, the distinguished German phytogeographer. Eight hundred and thirty-nine duplicate specimens of Dr. Weberbauer's collections have recently been acquired.

The large number of new species reported by specialists is an indication of the richness of the Peruvian flora and the great opportunity it presents for further exploration and botanical research. Evidently little relatively is as yet known regarding the herbs and trees of Peru. The present collections from there have been organized to the extent of placing them in families (and to some extent assigning them to genera), and were thus made available for study by the following specialists on particular groups:

O. Ames, Ames Botanical Laboratory, *Orchidaceae*; S. F. Blake, U. S. Bureau of Plant Industry, *Compositae* (exclusive of groups listed elsewhere) *Polygalaceae*; G. S. Bryan, University of Wisconsin, and A. W. Evans, Yale University, *Liverworts*; Carl Epling, University of California, Southern Branch, *Labiatae*; H. A. Gleason, N. Y. Botanical Garden, *Lobeliaceae*, *Vernoniaceae*; J. M. Greenman, Missouri Botanical Garden, *Senecio*; A. S. Hitchcock, U. S. Dept. of Agriculture, *Gramineae*; M. A. Howe, N. Y. Botanical Garden, *Marine Algae*; I. M. Johnston, Gray Herbarium of Harvard University, *Boraginaceae* (excluding *Cordia* and *Tournefortia*), *Violaceae*, *Onagraceae*, *Euphorbiaceae*, *Araliaceae*, *Caricaceae*, *Hydrophyllaceae*, *Polemoniaceae*, *Malvaceae*; E. P. Killip, U. S. National Museum, *Bomarea*, *Cordia*, *Tournefortia*, *Escalloniaceae*, *Passifloraceae*, *Urticaceae*, *Valerianaceae*; K. K. Mackenzie, Maplewood, N. J., *Cyperaceae*; W. R. Maxon, U. S. National Museum, *Filices*; G. K. Merrill, Rockland, Me., *Lichens*; E. B. Payson, University of Wyoming, *Cruciferae*, *Ranunculaceae*; F. W. Pennell, Academy of Natural Sciences, Philadelphia, *Scrophulariaceae*; C. V. Piper, U. S. Dept. of Agriculture, *Phaseolus*, *Canavalia*; B. L. Robinson, Gray Herbarium of Harvard University, *Eupatoriaceae*; J. N. Rose, U. S. National Museum, *Cassia*, *Crotalaria*, *Lupinus*, *Cactaceae*, *Crassulaceae*, *Umbelliferae*; J. H. Schaffner, Ohio State University, *Equisetaceae*; E. E. Sherff, University of Chicago, *Bidens*, *Taraxacum*; P. C. Standley, U. S. National Museum, *Amaranthaceae*, *Chenopodiaceae*, *Nyctaginaceae*, *Rubiaceae*; W. Trelease, University of Illinois, *Piperaceae*; R. S. Williams, N. Y. Botanical Garden, *Musci*; T. G. Yunker, DePauw University, *Cuscuta*.

Some of the material not represented in the above list is being studied in the Museum.

The Museum has been unable to contribute very materially to the study of these collections, as the large amount of routine and other work devolving on the small scientific staff in the department of Botany leaves little time for research.

GEOLOGY.—The contents of the case of fossils in Stanley Field Hall were changed in part, the mounted skeleton of *Dinictis* being replaced by a series of models illustrating the evolution of the horse. Supplementing this series, skulls and feet of early horses were installed. A restoration of a fossil cycad flower prepared in the Stanley Field Plant Reproduction Laboratory, together with specimens of fossil cycad leaves, was also placed in this case.

In the collection of systematic minerals in Hall 34, the installation of the specimens previously exhibited on shelves in four large cases was changed by placing them on sloping screens to which individual blocks were fastened. By this means the specimens are brought nearer to the eye of the observer and individual mounts are provided. The specimens of phosphates, arsenates, sulphates, hydrocarbons and pseudomorphs, were mounted in this manner. After renovation of the interior, the contents of one case of the Chalmers crystal collection were rearranged, and additional labels provided so that they can be read from either side of the case. The case of amber was also cleaned, its contents rearranged and a collection of jet added. The exhibit of imitation gems, numbering 208 specimens, was reinstalled in trays newly lined with silk and new labels were provided. Rearrangements were also made of the contents of three cases of concretions and septaria in this hall, and a number of new specimens were added. A special installation was made of a specimen of quartz crystal containing water. This was installed in such a manner that by turning a button, movement of the water can be seen.

The case containing the large fulgurite was moved from the west end of Hall 35 to a position adjoining the other fulgurites. One of the latter was mounted in a matrix of sand in order to aid in the interpretation of these bodies. The stalactites in the case of cave material were suspended from the top of the case in order that their natural positions might be represented. Several specimens were added to this series.

The arrangement of the specimens of the systematic rock collection was improved by changing the position of three of the cases and re-installing one case.

The large model of the Moon which was presented to the Museum in 1898, by the late Lewis Reese of Chicago, was installed at the west end of Hall 35. This model is without doubt the largest and most elaborate representation of the moon ever made and affords an unparalleled opportunity for the study of the surface features of our satellite. Although the model was constructed a number of years ago, the details of the moon's surface large enough to be shown on it were at that time so fully known that later studies have not added materially to them. The model was constructed by Th. Dickert of Bonn under the immediate direction of Dr. J. P. Julius Schmidt, Director of the Observatory of Athens, Greece, and one of the most eminent of selenographers. The accuracy and completeness of the model can therefore be fully relied upon. The model is 19.2 feet in diameter and has a horizontal scale of 1:600,000 and a vertical scale of 1:200,000. For its present installation it was carefully reassembled and its surface fully restored and refinished.

The model of a cement plant which has been in preparation for some time was completed and placed on exhibition in Hall 36. This model, $11\frac{1}{4}$ by $3\frac{1}{2}$ feet in dimension, is a reproduction of the plant of the Marquette Cement Company at Oglesby, Illinois, and illustrates all stages of the manufacture of portland cement from the mining of the raw materials to the finished product. Crushers, kilns and other machinery, storage houses, methods of transportation and details of mining limestone and clay for the cement are shown in full detail. The model has been mounted in a case of the standard Museum pattern, six feet high, and placed adjoining the general cement exhibit. The model was constructed in the Museum laboratories by Associate Curator Nichols and Valerie Legault. To officials of the Marquette Cement Company the Museum is under obligation for information freely given and many courtesies extended during the construction of the model.

The installation of the exhibit of candles in this hall in one of the cases devoted to petroleum products was enlarged and modified to add the candles presented during the year by the Standard Oil Company (Indiana). Scenic backgrounds were provided in Skiff Hall for the series of three models illustrating the development of iron furnaces. These backgrounds were designed to show typical surroundings of successive types of iron furnaces and thus aid in visualizing the development of these furnaces. By the use of blocks giving more elevation to individual specimens, an improved installation was obtained for a large number of specimens in this hall. Exhibits to which this revision has been applied include those of asbestos, mica, phosphates, lime, gypsum, borax, abrasives, salt, and part of the iron ores, comprising in all about 600 specimens.





MODEL OF THE MOON.
GIFT OF THE LATE LEWIS REESE.
(Diameter, 39 feet.)

The positions of several cases in this Hall were changed in order to give a better distribution of certain exhibits, but the contents of the cases were not materially changed. The series of twenty-one specimens of Indiana limestone, presented by the Indiana Limestone Quarrymen's Association, was installed in one of the cases containing building stones. Space was obtained by withdrawing specimens which were of lesser importance or out of date. A number of specimens of Canadian gold ores were added to the exhibit of these ores in the hall and the accompanying series rearranged.

In order to replace the temporary base formerly used, a new and permanent base was constructed and placed in position for the restoration of the Moa on exhibition in Hall 38. The contents of two large cases of invertebrate fossils were transferred to other cases in order to make room for selected series of the Borden collection, and one of these cases was filled with the Borden fossils. The case containing the collection of Paleozoic sponges, presented by Mr. William J. Chalmers and the late Byron L. Smith, was moved to the end of the hall, and an unoccupied case was then partly filled with fossils of the Borden collection. In order to improve their installation sloping screens with individual blocks were provided for a large number of Tertiary invertebrate fossils. Specimens of vertebrate fossils collected by the Capt. Marshall Field Expedition to Patagonia were installed in this hall during the year as fast as they were prepared for exhibition. The specimens so installed included a series of four skulls of *Nesodon*, an animal resembling the rhinoceros in size. Two of the skulls were complete, the others are exhibited with the matrix only partially removed, in order to show the mode of occurrence of these fossils. A complete skeleton of *Interatherium*, a small toxodont, a skull of a carnivore, *Borhyaenodon*, and of a sloth, *Haplopus*, and a carapace with partial skeleton of an extinct armadillo, *Proeutatus*, were other fossils from the Patagonian Expedition which were prepared and placed on exhibition in this hall. A skull and fore and hind limbs of the fossil horse, *Equus scotti*, from Texas, and specimens of *Toxodon* and *Megatherium*, collected by the Curator in Brazil, were also added to the series on exhibition.

A number of the gem specimens collected by the Curator in Brazil were installed in Higginbotham Hall. These additions included five specimens of crystallized emerald, a number of cut and uncut Brazilian diamonds, a cut blue aquamarine weighing $189\frac{1}{4}$ carats, several specimens of cut and uncut topaz, including one large crystal of gem quality weighing $89\frac{1}{4}$ pounds, a carved specimen of amethyst and some uncut specimens of the same mineral, several varieties of cut tourmaline mounted in a bracelet, and a large, cut rubellite or red tourmaline. The

large, cut Persian turquoise, presented by H. H. Topakyan, was also installed in the hall.

The Departmental library has been installed in three rooms adjacent to the Curator's office. Substantial and well-finished stacks, fully supplied with shelving, have been built in these rooms, the style, design and finish of the stacks conforming to the space and lighting of the rooms. In these stacks the Departmental library, numbering about 10,000 volumes, has been installed.

Groupings of the volumes have been made to facilitate reference. In Room 124 have been placed bound serials and works on gems, meteorites, etc.; in Room 121, publications of the United States Geological Survey and other United States government publications, and in Room 119, publications of state and foreign geological surveys. One thousand, three hundred and eighty-eight feet of shelving in all were provided and two of the rooms were furnished with tables and chairs. In addition, a room adjoining the library was fitted with shelving and other facilities for Departmental cataloguing, 102 feet of shelving having been provided for this purpose.

Considerable progress was made in furnishing adequate installation for the study collections. Of the two large rooms and one small one on the third floor set aside for these collections, one is devoted to the study collection of fossil vertebrates, another to a part of the invertebrate fossils, and the other to the remaining collections. In these rooms fourteen substantial stacks containing 2,074 trays were installed during the year. The stacks are arranged facing aisles leading to windows, thus affording good light. The stacks are 7 feet high and either 15 or 18 feet long. The trays are of wood and of the uniform lateral dimensions of 18 by 27 inches, but have a variation in depth of 3, 6 $\frac{1}{4}$ and 10 inches. The study collections illustrating systematic minerals, lithology, physical geology and economic geology have all been placed in these trays. For the most part the specimens are placed in smaller individual trays and labelled. The work of installation also included unpacking, cleaning and checking the record of each specimen as placed. The arrangement and distribution of these collections not only insures better preservation of the specimens and facilitates their study, but also enables more rapid and adequate selections to be made when specimens are desired for exhibition. Eight, well-finished oak tables 3 by 9 feet each have been provided in these rooms in order to facilitate the sorting and handling of the study collections, and in two of the rooms, sinks with drain boards and running water have been installed.

After the return of Preparators Sternberg and Abbott from the field, preparation of the vertebrate fossils collected by the Captain Marshall Field Expedition in Patagonia was actively carried on by them in the paleontological laboratory. An electrically operated lathe with chucks, motor and flexible shaft was added to the equipment of this laboratory.

ZOOLOGY.—In the Department of Zoology a case of North American Bears, prepared in 1923, including the Black, the Cinnamon and the Glacier Bear, was installed early in January in the systematic exhibit of mammals. This is the first of a new style of installation which it is proposed to introduce into this exhibit and to be developed gradually until the entire hall is reorganized. Although several species are included in a single case, those which are related are grouped together, and all are placed on a continuous natural groundwork instead of on separate wooden bases. Vegetation is introduced in a limited amount, and the realism of the groundwork is carried only to the point of the reproduction of general types of natural land formations. The feature of the installation is not only in the appearance of life given to the animals when placed on natural rough surfaces instead of smooth polished ones, but in the opportunity it gives for attractive groupings and for varied poses and attitudes of individual animals. A second case (see Pl. LII) of this series was installed late in the year, containing six species of North American cats, Jaguar, Cougar, Lynx, Bobcat, Ocelot and Yaguarundi. A small case containing a temporary installation of an American Red Fox was removed from Stanley Field Hall and in its place was substituted a Chilean Pudu, one of the very tiny deer recently obtained by the Captain Marshall Field Chilean expedition. Owing to lack of cases and pending rearrangement of space, no further installations of mammals were made, but a considerable number of specimens were mounted for use in the near future. Among these are White Mountain Sheep, Chilean Huemul, Brazilian Maned Wolf, Ouakari Monkey, Chinchilla, Peruvian Tayra, Argentine Viscacha, American Badger, and a series of small mammals from the vicinity of Chicago.

A case of American birds of prey, including the better known hawks and owls, was installed for temporary display in Stanley Field Hall. In this hall, late in the year, a group of the extinct Passenger Pigeon was placed on exhibition. Eight birds and a nest and egg are shown in the upper branches of an oak stub, representing a scene in northern Illinois. The birds are the finest of a considerable series which has been accumulated over a period of years and presented to the Museum by President Stanley Field. Some of the specimens had been preserved for more than fifty years and their preparation in life-like positions was a matter

of patient and skillful manipulation which was carried out very successfully by Taxidermist Hine. A feature of the group is the nest, which is a genuine one presented by R. M. Barnes, and one of the very few Passenger Pigeon's nests which are known to be preserved. Many other birds were mounted during the year to meet needs which will arise in the proposed revision of the systematic exhibit of birds. These are necessarily withheld from installation for a time until others properly belonging with them can be obtained.

Models of a South American Anaconda and a Belize Crocodile were temporarily exhibited in the hall of reptiles, but were later removed for rearrangement since the Anaconda showed striking qualities which seemed to warrant the devotion of an entire case to it. Further models of reptiles have been made but not installed. These include a Florida King Snake, a Corn Snake, a Chicken Snake, a Glass Snake and a Gila Monster. The two American Crocodiles, begun in 1923, were completed, and only await delivery of a case for installation in a large group for which accessions are practically all prepared.

A special case of recently mounted fishes was shown in Stanley Field Hall. One side of this was devoted to game fishes of our northern lakes and streams, especially pike, pickerel and muskellunge, showing the distinctions between the scientifically recognizable varieties which are so often confused in the popular mind. On the other side of the case was displayed a collection of Pacific Coast food fishes, mostly from the vicinity of Catalina Island, and presented to the Museum by Mr. Keith Spaulding. Various other fish specimens were finished but not installed, and at the close of the year nearly 200 were on hand in partly prepared condition.

Considerable progress, despite pressure of other work, was made on the determining and respreading of the North American butterflies and moths selected for exhibition, with the result that the installation of some of this material may be confidently expected in 1925.

Two special exhibits of zoological pictures were carried out during the year. The first of these consisted of 72 oil paintings of fishes and angling scenes by Mr. Louis Rhead, which were on view in Room 12 for several months. Later, an exhibition was given of hand colored photographs of birds by Mr. E. H. Matern of Detroit.

In December, fourteen new exhibition cases of improved design were delivered, and arrangements were begun for their utilization at once in the systematic halls of birds and mammals. Old style cases, as released from the hall of mammals, were transferred to the hall of osteology to be used for the skeletons of large mammals heretofore shown on open

stands. At the close of the year, these transfers and rearrangements were under way.

Much needed equipment in the offices and work rooms of the Department was provided, especially in the divisions of Reptiles and Osteology, where built-in storage cases of good design were constructed. These have made possible the unpacking and transfer of collections from temporary to permanent quarters where permanent systems of arrangement and labeling may be put into effect. In the Division of Reptiles, especially, the arrangement of cases, trays, work tables, catalogues, files and books is all that could be desired. Incoming material can be cared for promptly and without waste of time, while among the thousands of specimens stored, any one needed may be found at a moment's notice.

The removal of the principal taxidermists' quarters from the ground floor to the fourth floor has proved highly successful. The conditions of accessibility, space, light and air in the new quarters are practically ideal, and fulfill to an unusual degree the rather exacting requirements of artist, sculptor and skin dresser.

In the exhibition halls, the installation of a new system of artificial lighting by which all the large groups receive top light, has resulted in very great improvement. All the cases containing bird groups and others having painted backgrounds have been opened, and the specimens and accessories cleaned and renovated. Meanwhile, the backgrounds have been cleaned of stains, and considerable repainting has been done to overcome defects incurred through unavoidable exposure during and since moving them from the old Museum building. The African Elephants in Stanley Field Hall also were cleaned and their skins given such external treatment as seemed advisable to insure their further preservation in good condition.

The continued generous contributions of Mr. Edward E. Ayer to the zoological library, especially in the subjects of ornithology and ichthyology, made it necessary to provide more shelf room for the rapidly growing collection of books. The crowded condition was relieved by the addition of three new cases which involved a complete rearrangement of all the books. This was carried out under the supervision of Associate Curator Gerhard with the assistance of several other members of the staff. The library is now well arranged under a uniform system of classification in which provision is made for considerable future expansion.

Good progress was made during the year in the preparation of rough specimens received from recent expeditions. The taxidermists, when

time could be spared from exhibition work, have prepared a considerable number of mammal skins for the reference collection, and the skin dresser has been kept busy with the large amount of material needing his attention. The osteologist has cleaned some 800 skulls and a small number of skeletons in addition to the work of unpacking, classifying, and arranging the general osteological collections in the new storage cases.

THE N. W. HARRIS PUBLIC SCHOOL EXTENSION

At the close of the year, 830 cases were available for loaning to the schools of Chicago. This total is an increase of sixty cases over the preceding year. Several more cases would have been added to the series had there not been a delay on the part of the cabinet makers in delivering cases to the Department. Work on most of the new cases was started since the first of the year 1924, although preparation on a few of the cases that were finished began late in the year 1923. In addition to the cases completed a number are in various stages of preparation.

The several hundred cases that have been in constant use in the schools during the 1923-1924 school year, were carefully inspected for such repairs to the cases and their contents as might be necessary. The number of cases requiring repairs was exceedingly small in comparison with the large number in circulation.

The coöperation of Swift & Company enabled the Department to prepare six duplicated cases of "Beef and By-products." Under this heading are exhibited miniatures of a Hereford steer, and a side of beef outlined to show the various obtainable cuts, and specimens of thirty or more well-known by-products of cattle. It has been possible for this Department, through the aid of Sprague, Warner and Company, to prepare four interesting and attractive cases of Spanish Paprika. In preparing cases of natural history subjects it has been the purpose of this Department to use specimens that are to be found in and around Chicago. As a result of this endeavor there have been prepared cases of 290 such subjects. Of this number 173 are of different species of birds, 34 are of various insects, 17 of different fishes, 16 of mammals, 14 of reptiles, and 16 of plants. Many of these specimens are shown in habitat groups.

A schedule which provides that two cases shall be continually in each school became effective at the beginning of the present school year. In accordance with this arrangement two cases are now delivered to each school and left there for ten school days. At the end of that period they

are collected for delivery elsewhere and two other cases are substituted for them. By this procedure, 656 cases are kept in continuous circulation among the schools. During the school year the 328 schools on the schedule are loaned two cases on each of the seventeen deliveries that are made to each of the schools. This will insure to each school the use of thirty-four cases during the school year.

An additional truck was placed in operation at the beginning of the present school year. With the two trucks now in use not only a dependable schedule is assured, but also the loaning of cases with greater frequency and promptness than heretofore, when requested by schools for specific purposes. The body of the new truck is similar in appearance and detail of construction to the one originally planned for this Department, which is still in use.

During the year a requisition was made for one hundred new cases similar to those in use since the creation of this Department, which have met the many requirements demanded of them.

Gads Hill Center, a community settlement at 1919 West Cullerton Street, made application for the loan of cases, and this service has been extended by the Department. The Head Resident of the Gads Hill Center in reporting the aid the cases had been to that institution, stated: "We keep the cases in our lobby. Last year we ran an attendance of 90,000 and I think we are holding that average this year. Every one does not stop to look at the cases, but great numbers do, and because they do not come in crowds they have time to pause, pull out the slides and read. I know it all counts."

During the past year, as in previous years, requests were received from sources other than schools of Chicago for the loan of cases. In response to these requests eight cases of natural history subjects were loaned to the Chicago Art Institute from June 30th to August 22nd, for use in its juvenile section; and ten cases were loaned for one month to the Chicago Chapter of the Wild Flowers Preservation Society of America, for its annual exhibition held at the Art Institute. Again, the Secretary of Bureau of Parks, Playgrounds and Beaches requested a number of cases for exhibition on the Municipal Pier during the summer vacation period. In compliance with this request twenty-four cases were loaned. The Promotional Manager of the Central Y. M. C. A. school asked for, and was loaned, twelve cases for educational purposes. The Harris Trust and Savings Bank was loaned two cases of bird subjects. These cases were exhibited for a period of two weeks in a street window of the bank. To illustrate a lecture given at the New First Church to the Gnosis Club, two cases were loaned. The Rochester (Minnesota) Art

Association was loaned four cases, and two cases were loaned to the Nashville (Tennessee) Art Gallery.

GUIDE LECTURERS.—As in former years, the guide-lecture service was extended to classes from public, parochial and private schools, to clubs, conventions, and other groups of visitors to the Museum. During the year an assistant guide-lecturer was added to the staff and the service was expanded into several new fields. One of the first innovations was a Vacation Course of Instruction given during the Summer months for children recommended by members of the Museum. This course was composed of a series of ten lessons based on Museum exhibits, supplemented by sets of lantern slides. It was attended by 26 classes with an enrollment of 222 children. A further addition to the work was made by providing illustrated lectures in connection with the tours for women's clubs. These lectures served either as an introduction to the Museum collections as a whole, or to the particular collection to be studied by the club. The lecture on "Activities Behind the Scenes," in which the history of the Museum, its methods of making collections and the preparation of exhibits were described, was of particular interest to the club members. There were 41 of these lectures given with an attendance of 900 individuals. School classes, numbering 128, enjoyed the privilege of conducted tours through the collections correlating with their course of study. Towards the close of the year reprints of the "Outline of the Elementary Public School Curriculum and Museum Exhibits Showing the Correlation in Geography, History, Science and Manual Arts" were distributed to all school principals in the city, for the purpose of stimulating their interest in the Museum guide lecture service. The clubs and conventions receiving guide-lecture service during the year numbered 98, with an attendance of 2,410. There were 135 lectures on Museum exhibits given to general visitors, in accordance with the printed schedule. A total of 428 lectures were given by the guide-lecturers to 9,091 individuals.

ART RESEARCH CLASSES.—During the year the classes in research from the Art Institute of Chicago visited the Museum daily. There were approximately 400 students enrolled in these classes under the direction of five instructors. The subjects studied included primitive design, Indian basketry, pottery, textiles and beadwork, Egyptian, Greek and Roman pottery, Chinese vase forms and designs, Javanese batik and Melanesian design and miscellaneous design. The nature studies consisted of leaves, flowers and seeds, birds, insects, reptiles, fish, shells, rock coloration and precious stones, large and small. Other subjects are



THE EXTINCT PASSENGER PIGEON; A HABITAT GROUP.

BIRDS PRESENTED BY MR. STANLEY FIELD; NEST BY JUDGE R. M. BARNES.

TAXIDERMV BY ASHLEY HINE.

About one-eighth natural size.

being introduced as the instructors become more acquainted with the exhibits and the vast wealth of material contained in the Institution.

A portfolio on research "Design in Nature," compiled from the work of students, containing approximately 220 plates, showing about 3,000 designs, is now being produced by the Museum Press. The work in this portfolio is highly illustrative of the educational advantages of such organized classes in the Museum.

PUBLICITY

GENERAL.—During the past year the scope of the Publicity work was enlarged to include the aims and purposes of the Museum organization, in order that they might be more clearly understood by the public. A larger geographic territory was covered, both by press notices and advertising, and as a result a correspondingly larger public was informed of the work accomplished by the Museum staff.

The publicity during the early period of its work was largely confined to acquainting the public with the location, approaches and free days of the Museum. While this was continued throughout the year, a larger number of press notices were sent out with a view to creating an interest in the personnel of the Institution, and in the results of their research and laboratory work.

In the press notices the primary consideration was whether the story would interest the public sufficiently to attract it to the Museum for further investigation of the exhibits on display. This necessarily led to the curtailment of articles of a more technical character.

The advertising, with one exception, was changed from directional placards to posters of the exhibits on display at the Museum. The Institution is grateful to the transportation companies for their contribution of advertising space, and greatly indebted to them.

PRESS PUBLICITY.—An average of two newspaper notices were published each week in the local papers. Of the one hundred and twenty articles printed, thirty-eight were selected by the Associated Press or other news syndicates, and received a national circulation. Descriptive articles of the Museum expeditions to South America were sent to the South American press by the Associated and United Press Syndicate. The foreign language press of the city, which reaches over eight hundred thousand persons, was included this year for newspaper notices. These newspapers gave the Museum an unusual amount of space for general articles describing the departmental exhibits.

Photographs from the expeditions being conducted by the Museum, and photographs of new exhibits, were printed by the Sunday Tribune,

Daily News, N. E. A. Service, Underwood and Underwood, Atlantic-Pacific, International News Service, and Popular Science Monthly, the news services of these syndicates covering the entire country. Reviews of the leaflet and design series of publications were published by the literary supplements of the local papers, New York Times and World, and popular scientific magazines. Notices of the lecture series were printed in the convention column of the daily press through the courtesy of the Chicago Association of Commerce.

ADVERTISING.—A total of 22,600 posters were distributed during the year to the transportation agencies, of which 8,300 were printed outside of the Museum at the expense of these companies. The others were printed by the Museum.

A series of six color posters, representing Museum exhibits, were displayed for one year in the Elevated Line Stations. Two larger posters of Museum exhibits were printed by the Chicago Rapid Transit Company, at their expense, and displayed on the elevated platforms for four months. Placards announcing the lecture courses were also displayed by the Rapid Transit Company in the spring and fall. An additional general placard was placed on the station platforms in December. The Surface Lines printed, at their own expense, a number of overhead posters advertising the Museum, which were placed on the cars in March and August. They also displayed lecture placards in the bulkheads of the cars during the spring and fall. This represented a total display of 6,200 posters printed by the Museum. The Illinois Central, through the courtesy of the Inland Advertising Company, granted space for a year in their suburban service. Two posters were displayed for a period of six months each, and lecture programs were placed on the station platforms during the spring and autumn courses. The Rock Island Suburban Service, and the Aurora and Elgin Electric Lines also placed the Museum lecture programs on their station platforms during the spring and fall.

Three-color posters of the Museum building, giving the hours, location and other information concerning the Institution were prominently placed during January and February by the following stores: Marshall Field & Co., Carson, Pirie, Scott & Co., Charles A. Stevens & Bros., Davis Dry Goods Co., Mandel Bros., The Hub, and Hillman's Department Store. For this purpose three hundred posters were used.

Museum posters and direction folders, giving the correct motor routes to the Museum, were sent to all of the motor clubs in the central western states. These posters and cards were placed in their tourists' bureau for free distribution to motorists.

General and directional advertisements were placed in six of the largest foreign language papers on Saturdays and Sundays for the month of August, and a similar advertisement for the Saturday and Sunday preceding Labor Day. Marshall Field and Company placed an editorial concerning the Museum in their advertising columns, which was shown for two days in all local newspapers. This gave the editorial a circulation of approximately 1,500,000.

The Automobile Blue Book, Associated Tours Guide and TIB Auto Route Books published directions for reaching the Museum by motor. The Motor News in its September issue printed a special cover showing the Museum building.

The Chicago Sunday Schools were added to the list of institutions displaying the lecture courses of the Museum on their bulletin boards.

RADIO.—Eleven radio talks were given on Friday nights during April, May and June by members of the scientific staff. Reports received from the WMAQ, Daily News Radio Station, show that these talks were enthusiastically received throughout the country.

NEWSREELS.—Newsreels were made of the following subjects: **PATHE:** Cement Plant, Construction of Pulgurite, Presentation of Turquoise to Museum, Comparative sizes of Topaz, Turquoise and other stones, Construction of plaster cast models of face and hands of Chinese students and process of dressing manikin for exhibits of Chinese theatrical costumes, Film showing steps in new celluloid process. **INTERNATIONAL NEWSREEL:** Film showing Topaz and Turquoise. **FOX FILM CORPORATION:** Film of fossil eggs.

TRADE PAPERS.—Articles on economic exhibits in the Museum were published by the following trade and class journals: Paint, Oil and Chemical Review, Jeweler's Circular, Power Boating, Central Furrier, Furniture Journal, American Lumberman, Women's World, Drake-a-Day, Yellow Cab Taxigrams. Special articles on the Museum were printed by the following publications: Daily News Almanac, World's Almanac, Encyclopedia Americana and the Architectural Record.

DIRECTION FOLDERS.—There were distributed to the information booths, hotels and railroad stations in Chicago 10,600 folders on "How to Reach Field Museum." A form letter has been sent each month to the chairman of all large conventions, offering them a supply of these direction folders. Eighteen conventions replied, and requested 10,000 folders, which were supplied.

PRINTING.—The total number of impressions made in the Section of Printing during the year amounted to approximately 1,000,000. The following publications were printed and bound during the year by this section:

| | |
|--|---------|
| Regular publication series..... | 9,807 |
| Design Series..... | 6,126 |
| Leaflet Series..... | 66,649 |
| General Guide..... | 23,023 |
| Publication and leaflet price lists..... | 447 |
| Geographic Society Year Book..... | 1,829 |
| Total..... | 109,883 |

The number of labels and other impressions printed follows:

| | Exhibition Labels | Other Impressions |
|------------------------------------|----------------------|----------------------|
| Anthropology..... | 3,226 | 8,226 |
| Botany..... | 1,608 | 14,904 |
| Geology..... | 434 | 1,950 |
| Zoology..... | 358 | 5,750 |
| Harris Extension..... | 451 | 3,110 |
| General..... | ..... | 291,857 |
| Geographic Society of Chicago..... | ..... | 58,225 |
| Total..... | 6,077 | 384,022 |

The press work on two botanical leaflets, the two Art Design numbers for Anthropology, and the catalogue of the Birds of the Americas was unusual in that an illustration of from two to four colors was used in each, these illustrations alone requiring 142,175 impressions.

SECTION OF PHOTOGRAPHY AND ILLUSTRATION.—The following tabulation sets forth the work performed in this section during the year:

| | Number of Lantern Slides Made | Number of Negatives Made | Number of Prints Made | Number of Negatives Developed for Field Expeditions | Movie Films Made |
|-----------------------|---|-----------------------------------|--------------------------------|---|------------------------|
| General..... | 14 | 512 | 1,778 | 24 | .. |
| Anthropology..... | 73 | 535 | 2,879 | .. | .. |
| Botany..... | .. | 180 | 2,596 | 72 | 37 |
| Geology..... | 386 | 107 | 1,141 | 360 | .. |
| Zoology..... | 161 | 104 | 828 | .. | 15 |
| Harris Extension..... | .. | 80 | 273 | .. | .. |
| Sale..... | 10 | .. | 38 | .. | .. |
| Gift..... | 7 | .. | 69 | .. | .. |
| Totals..... | 651 | 1,518 | 9,602 | 456 | 47 |

PHOTOGRAVURES.—A photogravure power press has been added to the Section during the year. A room for the installation of this press

was provided on the ground floor, adjoining the press room. The number of photogravures printed during the year is indicated below:

| | |
|--------------------------------|---------|
| Publication illustrations..... | 48,000 |
| Leaflet illustrations..... | 187,000 |
| Picture Post Card Albums..... | 99,600 |
| Post Cards of Building..... | 15,000 |
| Special..... | 12,000 |
| Total..... | 361,600 |

ARTIST.—The following statement shows the work performed by this section during the year:

ANTHROPOLOGY

- 1 drawing of Japanese pagoda.
- 1 drawing of a spear.
- 14 Japanese and Chinese photographs retouched.
- 3 rubbings retouched.
- 24 photographs retouched and figures attached.

GEOLOGY

- 3 large backgrounds painted for the blast furnace models.
- Retouching and coloring of cement model.
- Retouching and placing figures on fossil horse and plants.
- Alterations and retouching for paleontological publication illustrations.

BOTANY

- 2 enlarged photographs colored.
- 2 photographs retouched.
- 1 line drawing of cover design for Wild Flower leaflets.
- 154 ink tracings; 17 figures.
- 1 pen drawing of poison ivy seeds.
- 28 petals of *Victoria regia* colored.
- 1 seal redrawn.

ZOOLOGY

- 6 drawings of fish teeth.
- Lettering on 4 fish drawings.
- 9 drawings of mammal skulls.
- Assisting in the hanging of picture exhibits in Hall 12.

HARRIS EXTENSION

- 8 enlarged photographs colored backgrounds.
- Colored guide lines on 11 charts for cases.

PUBLICITY

- Cover design drawing for Motor News.
- Drawing of teepee for Surface Lines placard.
- Drawing of Museum building.
- Border design for direction cards.
- Line drawing of Egyptian hieroglyphics.
- 20 photographs retouched.

GENERAL

- 2 drawings of Membership certificate.
- Color sketch for Trustees' room.
- 10 lantern slides colored.
- 2 photographs retouched.
- Drawing and lettering for guide-lecture notices.
- Cuts repaired for Section of Printing.
- Letters renewed on books in Library.

PHOTOGRAPHY

- 28 photographs retouched and lantern slides blocked.

ATTENDANCE: The total attendance for the year is 643,285, which is an increase of 157,518 over the previous year. An analysis of the admissions is made elsewhere in this report.

Herewith are also submitted financial statement, list of accessions, names of members, etc.

D. C. DAVIES, Director.

ATTENDANCE STATISTICS

FROM JANUARY 1, 1924 TO DECEMBER 31, 1924.

| | |
|---|------------|
| Total Attendance | 643,459 |
| Paid Attendance | 100,582 |
| Free Admissions on Pay Days: | |
| Students | 11,411 |
| School Children | 25,337 |
| Teachers | 1,188 |
| Members | 631 |
| Special | 1,412 |
| Admissions on Free Days: | |
| Thursdays (52) | 74,548 |
| Saturdays (52) | 161,752 |
| Sundays (52) | 266,398 |
| Highest Attendance on any day (August 17, 1924) | 11,501 |
| Lowest Attendance on any day (February 4, 1924) | 89 |
| Highest Paid Attendance (September 1, 1924) | 4,537 |
| Average Daily Admissions (366 days) | 1,758 |
| Average Paid Admissions (210 days) | 479 |
| Number of Guides sold | 13,240 |
| Number of Articles checked | 18,844 |
| Number of Picture Post Cards sold | 109,255 |
| Publications—Receipts | \$1,349.48 |
| Photographs and Sculpture Sets—Receipts | 194.75 |
| Handbooks, Leaflets, etc.—Receipts | 1,077.86 |

GENERAL FUND

STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS

For the Year Ending December 31, 1924

Balance December 31, 1924.....\$ 45,651.20

RECEIPTS

| | | |
|--|---------------|----------------|
| Income—Endowment, General and Door Receipts..... | \$ 249,285.40 | |
| South Park Commissioners..... | 119,924.87 | |
| Sundry Receipts..... | 23,247.78 | |
| Memberships..... | 64,490.00 | |
| Contributions..... | 242,504.84 | |
| Sales of Securities..... | 574,910.94 | |
| | | \$1,274,372.83 |
| | | \$1,320,024.03 |

DISBURSEMENTS

| | | |
|--|----------------|----------------|
| Operating Expenses..... | \$ 427,431.95 | |
| Expeditions..... | 25,633.32 | |
| Collections Purchased..... | 10,312.16 | |
| Furniture and Fixtures..... | 12,156.11 | |
| Expenditures on Building and Approaches..... | 87,805.42 | |
| Securities Purchased..... | 703,524.34 | |
| | \$1,266,863.30 | |
| Transferred to Sinking Funds..... | 9,600.00 | \$1,276,463.30 |
| Cash Balance December 31, 1924..... | | \$ 43,560.53 |

THE N. W. HARRIS PUBLIC SCHOOL EXTENSION

Statement of Income and Expenses for the Year 1924

| | |
|--|--------------------|
| Interest and Dividends on Investments..... | \$ 21,577.84 |
| Operating Expenses..... | 19,057.29 |
| | <u>\$ 2,520.55</u> |
| Deduction from Income (Depreciation of Automobile Delivery Car) .. | 602.24 |
| Balance transferred to Surplus..... | \$ 1,918.31 |

STANLEY FIELD PLANT REPRODUCTION FUND

Statement of Income and Expenses for the Year 1924

| | |
|---|--------------------|
| Balance December 31, 1923..... | \$ 880.39 |
| Contributions by Stanley Field during 1924..... | 12,600.00 |
| | <u>\$13,480.39</u> |
| Operating Expenses 1924..... | 13,413.47 |
| Balance December 31, 1924..... | \$ 66.92 |

STANLEY FIELD MUSEUM EMPLOYEES PENSION FUND

Statement of Income and Expenses for the Year 1924

| | |
|--|--------------------|
| Interest and Dividends on Investments..... | \$11,825.57 |
| Pensions and Group Insurance for 1924..... | 8,545.14 |
| Balance added to Pension Fund..... | <u>\$ 3,280.43</u> |

ACCESSIONS

DEPARTMENT OF ANTHROPOLOGY

ADAMS, MRS. JOSEPH, Chicago.

- 1 Navaho double size saddle-blanket—Arizona, New Mexico (gift).
 10 objects: 1 basket, China; silver ear-rings and fillet of Negro woman, Trinidad; 1 silver necklace, Navaho; 1 Attu basket; 1 Haida basket; 1 nest miniature baskets, 1 miniature covered basket, 1 small basket, miniature colored vessels, Chile; 1 basket, Samoa; 1 metal bracelet, Africa; 1 brooch, N. W. Africa; 2 baskets and 1 dress ornament, Sudan; 3 necklaces of faience and stone beads, Egypt;—China; Trinidad; Navaho, Attu, Haida, United States; Chile; Samoa; Africa; Egypt (gift).

AYER, EDWARD E., Chicago.

- 22 pewter objects: plates, trays, bowls, coffee-pots, milk-pitchers, sugar-bowls, water-heater, candlesticks, etc.—England and Germany (gift).
 10 pewter objects: 4 tea-pots, 1 tankard, 5 plates—England and Germany (gift).
 7 pewter objects: 1 baptismal basin, 4 church utensils, 1 coffee-pot, 1 bucket—England, Germany and France (gift).
 30 pewter objects: 18 candlesticks, 1 pair figures, 10 tea-pots, 1 tureen—China (gift).
 9 pewter objects: 1 pair of lamps, 1 round box containing rosary, 2 sets of three altar-pieces, 1 buffalo figure, etc.—China (gift).
 3 pewter tea-pots and 1 soup-bowl—Canton, China (gift).
 1 pair of pewter candlesticks, 1 pewter soup-bowl—Swatow, China (gift).
 3 pewter objects: 1 inscribed tablet of the Han period, 2 tea-canisters—China (gift).
 4 pewter tea-canisters—Japan; 1 pewter tray with inlaid brass designs—China (gift).

- 3 pewter tea-pots and 2 pewter plates—China and England (gift).

- 12 pewter objects: 3 trays, 5 tea-pots, 1 small pitcher, 3 tea-canisters—China and Japan (gift).

- 1 pewter plate—Germany (gift).

- 1 pewter dish inlaid with brass—China (gift).

- 1 rectangular pewter box inlaid with brass—China (gift).

- 2 pewter tea-canisters, 1 pewter chafing-dish—China (gift).

- 1 small necklace of carnelian, glass and other beads—Ancient Egypt (gift).

- 1 Babylonian clay tablet of Nergal, Governor of Kish, containing list of animals presented for sacrifices, ca. 2350 B.C.—Drehem, Mesopotamia (gift).

AYER, MRS. EDWARD E., Chicago.

- 1 pewter pitcher—Strasbourg, Alsace, France (gift).

BARRETT, MISS ADELE, Chicago.

- Suit of armor of Samurai complete with mask, sword, spear and 2 fans (14th century)—Japan (gift).

BENNETT, MISS HELEN B., Chicago.

- About 34 specimens from prehistoric Indian grave: 2 pieces of braided bark, 1 bark fiber cord, 1 coil of unbaked clay, corn cobs, corn stalks, and other plant remains, plum stone and pieces of wood, 15 animal bones, 3 land snails, 4 clam shells, accompanied by 16 photographs showing grave and its location—Salts Bluff Rockshelter, Benton County, Arkansas (gift).

BLACKSTONE, MRS. T. B., Chicago.

- About 200 gourds, pottery vessels and accessories for keeping singing and fighting insects—Peking, China (gift).

BULLEN, MRS. FREDERICK F., Chicago.

Large embroidered cover of white silk. Beginning of 19th century—Canton, China (gift).

CHANDLER, M. G., Chicago.

19 objects: 3 women's appliqué robes, 1 woman's waist, 1 man's beaded shirt, 4 woven bags, 1 rawhide bag, 5 pair leggings, 1 woven burden strap, 1 knife, 1 feather necklace, 1 pair moccasins—Fox, Winnebago, Arapaho, Iroquois, Maori, United States and New Zealand (exchange).

DUNLAP, MRS. EVA W., Peking, China.

62 popular woodcuts and color prints—Peking, China (gift).

EMMONS, LIEUT. G. T., Princeton, New Jersey.

Outfit of Tsimshian shaman, Kwakiutl/copperrattle, Tlingit trinket basket, 2 jade implements from Tlingit, roll of cherry bark from Salish—Tsimshian, Kwakiutl, Tlingit and Salish, British Columbia and Alaska (exchange).

FIELD MUSEUM OF NATURAL HISTORY.

Collected by J. B. Abbott and G. F. Sternberg—Capt. Marshall Field Palaeontological Expedition to Argentina:

1 human skull and 5 flint implements associated with it—Lago Colhue Huapi, Territory of Santa Cruz, Argentina.

Collected by C. C. Sanborn—Capt. Marshall Field Expedition to Chile and Argentina:

1 prehistoric slate celt and 1 prehistoric slate projectile point—Chiloe Island, Chile.

1 stone axe with polished blade—Chile.

Purchases:

1 ancient jade adze—New Zealand, from Mrs. J. F. Hoffman, Wharton, New Jersey.

80 ivory carvings—Eskimo, Labrador, Canada, from Howard J. Smith, Grand Rapids, Mich.

FIELD MUSEUM-OXFORD UNIVERSITY JOINT EXPEDITION (Capt. Marshall Field Fund).

About 634 objects: Pottery vessels and sherds, clay figures, bricks, inscribed tablets, copper vessels, tools, weapons, and bracelets, silver cup and bracelets, iron, stone, bone and shell objects, necklaces, beads, and glass bottle—Kish, Mesopotamia.

GRIMM, MRS. EMMA, Chicago.

1 triangular axe of limestone, grooved on three sides—Sugar River near Brodhead, Rock County, Wisconsin (gift).

HARDY, P. A., EVANSTON, ILL.

1 large old brass image, solid cast, of standing Buddha on wooden base—Mandalay, Burma (gift).

HELLMAYR, DR. C. E., Chicago.

2 stone axe-heads—Juru (Parintintin) Tufian Indians, Rio Machados, affluent of Rio Madeira, Brazil, South America (gift).

HULBERT, MRS. E. D., Chicago.

1 ancient *poi* bowl, 1 tray of cola wood—Hawaii (gift).

HULL HOUSE, Chicago.

1 Persian rug presented by H. H. Topakyan; 1 pair Chinese scales for weighing silk, presented by B. F. Schlessinger; 1 woolen embroidered Turkish saddle-bags; and 77 tassels purchased by Dr. U. Jahn—Persia, China, Turkey, and Europe (loan material returned).

JONES, ARTHUR B., Chicago.

1284 objects of nephrite, stone, feather and flax robes, kilts and girdles, carved clubs, carved wooden boxes and Maori utensils—Maori and Moriori, New Zealand, Tasmania and Solomon Islands (gift).

JUTZI, JOHN, and TOM LADD, Chicago.

1 clay pot and 2 skeletons in fragmentary condition—Town of Lake Hunting and Fishing Club, 7 miles east of Mokenca, Illinois (gift).

KEEP, CHAUNCEY, Chicago.

1 red obsidian spear-head—Yurok, California (gift).



LARGE MALE GORILLA FROM BELGIAN CONGO.
FIELD STUDY FROM CENTRAL AFRICAN EXPEDITION
UNDER THE AUSPICES OF CAPTAIN MARSHALL FIELD AND MAJOR A. M. COLLINS.
About one-sixth natural size.

KNEELAND, MRS. L. M., Chicago.

- 10 objects: 1 fan and comb from Samoa; 2 Chinese ivory fans; 1 Korean fan; 1 Egyptian fan; 1 native hat, Kandy, Ceylon; 2 beaded balls from Sioux; 1 carved bowl and 1 carved cup from South America—Samoa, China, Korea, Ceylon, Egypt, North and South America, (gift).

LO, D. H., W. Lafayette, Indiana.

- Rubbing from Chinese inscription on stone tablet, being handwriting of Lo Yuan-hang—China (gift).

LOO, CHING-TSAI, New York.

- 1 foot-measure of the Chou dynasty (1122-247 B.C.)—Cheng-chou, Honan, China (gift).

PLANTZ, HENRY F., Oconomowoc, Wisconsin.

- 1 prehistoric bone needle from grave—Oconomowoc, Waushara County, Wisconsin (gift).

PLANTZ, H. W., Chicago.

- 3 objects: 1 Eskimo coiled basket and 1 carved billiken, 1 Nootka trinket basket and 1 circular mat, 1 Middle Mesa coiled plaque—Nootka, Hopi, Eskimo, Vancouver Island, Arizona and Alaska (gift).

ROCK, DR. JOSEPH F., Washington, D. C.

- Mo-so manuscript of five folios with colored pictographs—Li-kiang, Yün-nan, China (gift).

SARGENT, HOMER E., Pasadena, California.

- 1 shoulder blade of moose used for moose call, birch bow with 7 arrows, pair of snowshoes—Aishulik tribe and Aborigines, Khane Lake and Lake Teslin, Yukon Territory, Canada (gift).
22 old tobacco-pipes—Japan (gift).

SCOTT, MRS. JAMES W., Chicago.

- 26 objects: 3 baskets, 1 cigarette case, 1 brass bell, 6 hats, 3 fans, 1 lacquered tray, 1 pipe stem and 6 miscellaneous objects, 1 painted Greek vase, 1 pair saddlebags, 1 pair of moccasins, etc.—Alaska, Korea, Greece, and Palestine (gift).

- 17 objects: 1 Chilkat blanket, 1 bamboo cane, 1 silk bag, 1 belt cord, 1 pair straw sandals, 1 wooden doll, 2 strings of miniature dolls, 1 silk tassel, 1 card game, 1 tobacco-pipe, 1 thimble, 1 porcelain spoon, etc.—Alaska, Japan, Korea, China, Hawaii, Greece, North Africa (gift).

SELLECK, E. R., Sterling, Illinois.

- 1 pre-Columbian Indian skull dug up from an abandoned sand-pit—Sterling, Illinois (gift).

SKINNER, A., Milwaukee, Wisconsin.

- Woman's buckskin dress, with pair of boot moccasins—Comanche, Oklahoma (exchange).

STEVENSON, ROBERT E., Peking, China.

- 4 objects: 1 ivory insect cage, 1 ivory box, 1 glazed jar, 1 gourd with ivory cover—Peking, China (gift).

THOMAS, ESTATE OF ELEANOR M. H., Chicago.

- 1 large decorated brass tray—Morocco, Africa (gift).

TSUKAMOTO, MRS. KOSHIICHI, Chicago.

- 2 completely dressed carved wooden figures of Japanese women. Silk dresses in style of Tokugawa and Fujiwara periods—Kyoto, Japan (gift).

WILLIAMS, MRS. C. HOWARD, Chicago.

- Birchbark model of canoe decorated with porcupine quill designs—North Dakota (gift).

WINSLOW, MISS SOPHY, Chicago.

- 2 oil portraits representing chief of Blackfeet and his wife, by Carl Wimar—United States (gift).

WINTERNITZ, L., Grand Rapids, Michigan.

- Male's cotton garment and 1 doll dressed as woman—Seminole, Florida (gift).
3 dolls representing Seminole man, woman and girl—Florida (gift).

DEPARTMENT OF BOTANY

- ALLEN, F. S., Honolulu.
1 economic specimen (gift).
- BALL, C. R., Washington, D. C.
30 herbarium specimens (gift).
- BLAKE, S. P., Washington, D. C.
3 herbarium specimens (gift).
- DAHLGREN, B. E., Chicago, Illinois.
13 economic specimens (gift).
- DUGGERT, MISS F., Chicago, Illinois.
11 herbarium specimens (gift).
- EVANS, MISS P. A.
1 herbarium specimen (gift).
- FIELD MUSEUM OF NATURAL HISTORY.
Collected by A. C. Perard (Capt. Marshall Field British Guiana Expedition):
184 herbarium specimens.
87 wood specimens.
501 duplicate specimens.
Collected by J. F. Macbride:
5 herbarium specimens—Illinois and Indiana.
Stanley Field Laboratory:
20 models and reproductions of plants.
Transfer from Department of Geology:
500 herbarium specimens.
16 economic specimens.
Transfer from Department of Geology:
5 herbarium specimens.
1 economic specimen.
Purchases:
12,341 herbarium specimens—various localities.
61 economic specimens—various localities.
- GRAY HERBARIUM, Cambridge, Massachusetts.
587 herbarium specimens (exchange).
- HYNES, J. A., Chicago, Illinois.
1 economic specimen (gift).
- MURRAY, M. K., Chicago, Illinois.
1 economic specimen (gift).
- PAYSON, PROF. E. B., Laramie, Wyoming.
150 herbarium specimens (gift).
- RECORD, PROF. S. J., New Haven, Connecticut.
58 herbarium specimens (gift).
1 economic specimen (gift).
- ROSE, DR. J. N., Washington, D. C.
4 herbarium specimens (gift).
- ROYAL BOTANIC GARDENS, Kew, England.
333 herbarium specimens (exchange).
- SHERFF, E. E., Chicago, Illinois.
12 herbarium specimens (gift).
- THORLAKSON, MISS G., Wheaton, Illinois.
1 herbarium specimen (gift).
- U. S. DEPARTMENT OF AGRICULTURE, Washington, D. C.
80 herbarium specimens (exchange).
4 herbarium specimens (gift).
- U. S. NATIONAL MUSEUM, Washington, D. C.
1554 herbarium specimens (exchange).
- WELLS, W. H.
1 economic specimen (gift).

DEPARTMENT OF GEOLOGY

- ADAMSON, GEO. H., Chicago.
1 specimen synthetic alexandrite (gift).
- AKERS, VIVIAN, W., Norway, Maine.
2 photographs of Bennett Mine—Buckfield, Maine (gift).
- ARGETSINGER, MRS. E. H., Pipestone, Minnesota.
1 specimen bleached quartzite—Pipestone, Minnesota (gift).
- BLOCHER, ARTHUR, Amboy, Illinois.
9 specimens invertebrate fossils—Amboy, Illinois (gift).
- BURROUGHS, H. S., Chicago.
2 teeth of fossil elephant—Snake River, Southern Idaho (gift).
- CHALMERS, WILLIAM J., Chicago.
25 specimens crystallized minerals—Various localities (gift).
3 specimens crystallized minerals—Prince of Wales Island, Alaska (gift).

COLLINS, FLOYD, Cave City, Kentucky.

- 32 specimens stalactites and gypsum rosettes—Great Crystal Cave, Cave City, Kentucky (gift).

DENNIS, BROSE, Joplin, Missouri.

- 1 specimen blende with quartz—Joplin, Missouri (gift).

ELWELL, WILBUR J., Danbury, Connecticut.

- 2 specimens beryl—Branchville, Connecticut (gift).
- 1 specimen lithiophilite—Branchville, Connecticut (gift).

FIELD MUSEUM OF NATURAL HISTORY.

Collected by O. C. Farrington—Capt. Marshall Field Second Brazilian Expedition 1923:

- 381 specimens minerals—Bahia, Brazil.

Collected by H. W. Nichols:

- 11 specimens axinite—Moneta Mine, Timmins, Ontario.

Collected by C. C. Sanborn—Capt. Marshall Field Chilean Expedition 1922-1923:

- 1 specimen fossil brachiopod—Caldera, Chile.
- 1 specimen halotrichite—Putre, Province of Tacna, Chile.

Purchases:

- 1 specimen bi-colored cut sapphire—Australia.
- 6 specimens minerals—Arizona.
- 6 specimens minerals—Buckfield and Greenwood, Maine.
- 6 casts showing evolution of the horse.
- 1 stone meteorite—Coldwater, Kansas.
- 1 section of meteorite—Coldwater, Kansas.
- 1 stone meteorite—Neas County, Kansas.
- 57 microscopic slides of fossil foraminifera—Chicago.

FREDERICKS, P. G., Bessie, North Dakota.

- 18 specimens minerals and septaria—North Dakota (gift).

GREEN, U. D., Peebles, Ohio.

- 1 specimen peridotite—Kentucky (gift).

GREENLAND, C. W., Timmins, Ontario.

- 3 specimens loucheite—Rochester Mine, Timmins, Ontario (gift).

HALL, LEO G., Downer's Grove, Illinois.

- 1 photograph of electric furnace (gift).
- 6 specimens high temperature alloys and products (gift).

HEDIN, STANLEY, Chicago.

- 1 specimen fossil leaf in concretion—Mazon Creek, Illinois (gift).

HOTH, ALBERT, Chicago.

- 21 specimens dendrites—Lake Geneva, Wisconsin (gift).
- 4 specimens fossil coral—Lake Geneva, Wisconsin (gift).

INDIANA LIMESTONE QUARRYMEN'S ASSOCIATION, THE, Bedford, Indiana.

- 21 finished specimens illustrating colors and textures of Indiana limestone—Lawrence and Monroe Counties, Indiana (gift).
- 3 specimens stylolites—Bedford, Lawrence County, Indiana (gift).

KLIER, L., Chicago.

- 1 specimen septarium—Evanville, Arkansas (gift).

LAKE SHORE MINES, Ltd., Kirkland Lake, Ontario.

- 2 specimens telluride gold ores—Kirkland Lake, Ontario (gift).

LAUDOLF, MATH J., Peebles, Wisconsin.

- 3 specimens fossil brachiopods—Fond du Lac County, Wisconsin (gift).

LAW, D. H., Dixon, Illinois.

- 1 specimen fossil "honeycomb" coral—Dixon, Illinois (gift).

LEE, HENRY E., Rapid City, South Dakota.

- 20 specimens fossil plants—Lakota Formation, Blackhawk, South Dakota (exchange).

MARTIN, THOS., Hoopeston, Illinois.

- 1 specimen septarium—Starved Rock, Illinois (gift).

MATHER, HON. STEPHEN T., Washington, D. C. and HARVEY, MESSRS. BYRON and FORD, Kansas City, Missouri.

- 2 sandstone slabs showing fossil tracks—Hermit Trail, Grand Canyon, Arizona (gift).

MCCREA, W. S., Chicago.

- 3 photographs of concretions—Moorbridge, North Dakota (gift).

MILLARD, F. L., Georgetown, British Guiana.

- 1 specimen melanterite—Venezuela (gift).

MORRISON, J. CAMPBELL, Detroit, Michigan.

- 16 specimens peat briquettes (gift).

NORTON, C. E., Chicago.

- 1 specimen fossil trilobite—Kankakee, Illinois (gift).

OEFFINGER, ALBERT F., Whiting, Indiana.

- 82 specimens agate and chalcedony—Pacific Ocean Beach, between Coos Bay and Coquille River, Oregon (gift).

OHIO HYDRATE & SUPPLY CO., THE, Woodville, Ohio.

- 12 specimens fossil clams—Near Woodville, Ohio (gift).

PORCUPINE PAYMASTER MINES, Ltd., South Porcupine, Ontario.

- 1 specimen free gold in quartz—South Porcupine, Ontario (gift).

RICH, MATT, Chicago.

- 2 specimens fossil fish—Fossil, Wyoming (gift).

ROYSE, R. L., Ogden, Utah.

- 1 specimen silicified shells—Red Desert near Wamsutter, Wyoming (gift).

RUGGLES, DR. W. L., Oak Park, Illinois.

- 1 specimen baculite showing separate septa—Near Crawford, Nebraska (gift).

STANDARD OIL CO. (INDIANA), Chicago.

- 12 specimens "Travertine" candles, grease and oils (gift).

STORTER, G. W., Everglades, Florida.

- 5 specimens limestone—Everglades, Florida (gift).
- 5 specimens sandstone—Everglades, Florida (gift).

STROHRIGL, MICHAEL, Chicago.

- 1 specimen lava—Kilauea, Hawaiian Islands (gift).

SWANK, R. S., Chicago.

- 1 specimen bleached sandstone containing native copper—Paola, Oklahoma (gift).

TOPAKYAN, H. H., New York City, New York.

- 1 large gem turquoise—Peru (gift).

U. S. NATIONAL MUSEUM, Washington, D. C.

- 1 polished section of Four Corners meteorite—Four Corners, New Mexico (exchange).
- 1 cast of Four Corners meteorite (exchange).

WALZ, C. D., Hermosa, Black Hills, South Dakota.

- 2 specimens leached volcanic ash—Hermosa, Black Hills, South Dakota (gift).

WIRICK, V. P., Chicago.

- 1 mastodon vertebra—Dixon, Illinois (gift).

WRIGHT-HARGREAVES MINES, Ltd., Kirkland Lake, Ontario.

- 7 specimens tellurides of gold—Kirkland Lake, Ontario (gift).

DEPARTMENT OF ZOOLOGY

ALLEN, DR. W. C., Chicago.

- 4 fishes, 67 frogs, 29 tadpoles, 37 lizards, 10 snakes, 2 turtles, 1 alligator head, 4 crocodile eggs—Canal Zone, Panama (gift).

ALLEN, C. A., San Geronimo, California.

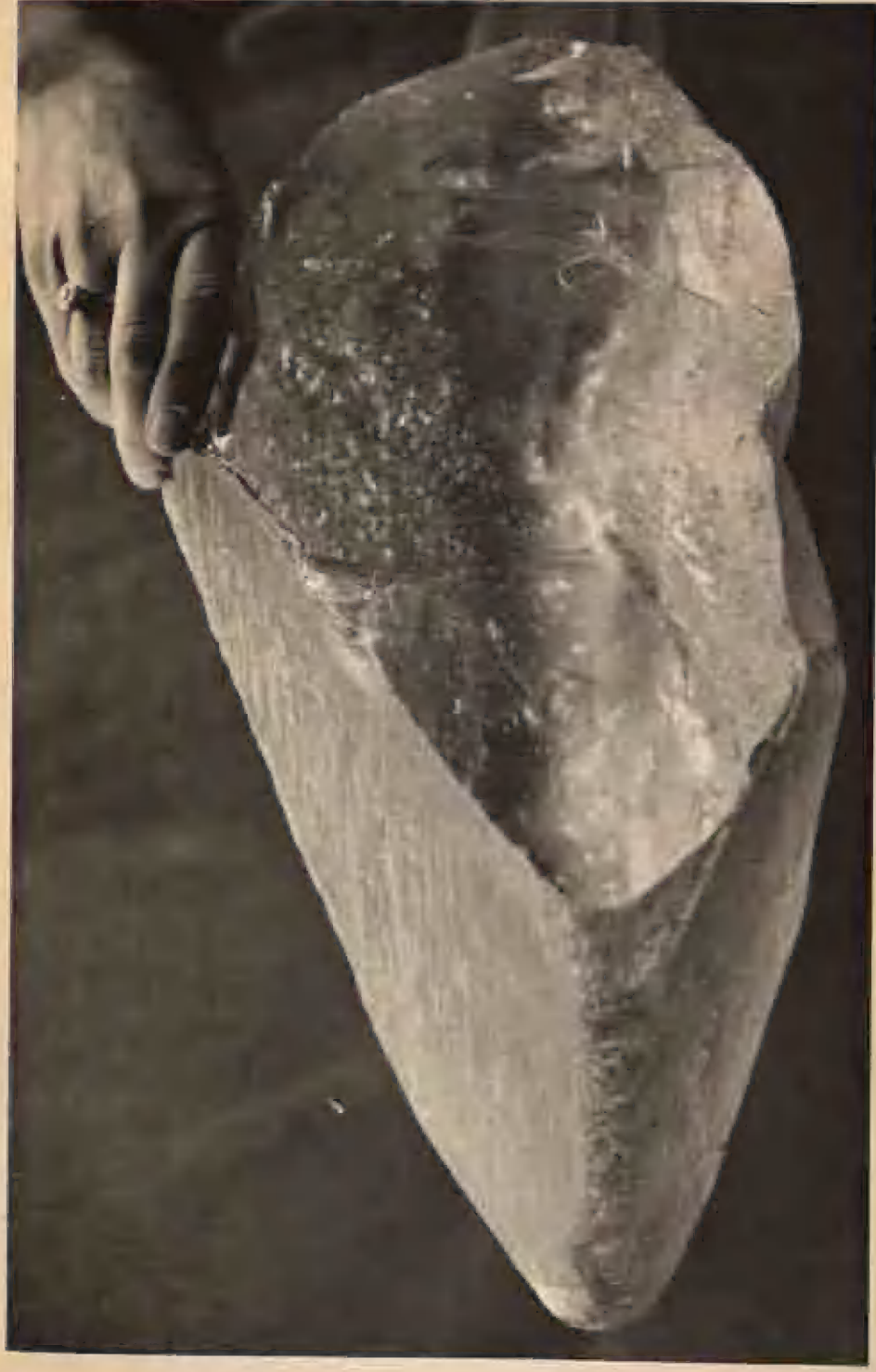
- 1 Gibbs' shrew—San Geronimo, California (gift).

AMERICAN MUSEUM OF NATURAL HISTORY, New York City.

- 5 fishes—Various localities (exchange).
- 15 reptiles—China (exchange).
- 2 frogs—San Domingo (gift).

AYER, EDWARD E., Chicago.

- 1 acorn store-house of California woodpecker—California (gift).



CRYSTAL OF GEM TOPAZ, MARAMBAIA, BRAZIL.
CAPTAIN MARSHALL FIELD SECOND BRAZILIAN EXPEDITION, 1923.
Weight 46 pounds. One-half actual size.

- BARNES, JUDGE R. M., Lacon, Illinois.
1 passenger pigeon nest—Iowa (gift).
- BARNES, DR. WILLIAM, Decatur, Illinois.
45 butterflies and moths—United States (gift).
- BERTOLET, A. S., Thayer, Indiana.
2 beetles—Thayer, Indiana (gift).
- BEZETT, HOWARD J., Baton Rouge, Louisiana.
18 fishes—Louisiana (exchange).
- BOOSTER'S CLUB, Edgemont, South Dakota.
1 badger, 4 ticks—Edgemont, South Dakota (gift).
- BOOTH FISHERIES COMPANY, Chicago.
1 lake sturgeon—Grand Haven, Michigan (gift).
- BUTLER, A. L., Horsham, England.
2 hummingbirds—Suecia, Peru (exchange).
- COALE, HENRY K., Highland Park, Illinois.
1 skunk, 2 cottontail rabbits—Highland Park, Illinois (gift).
1 chickadee—Lake County, Illinois (gift).
121 birds—Various countries (exchange).
- COLLINS, MAJOR A. M., Philadelphia, Pennsylvania.
226 butterflies—Belgian Congo, Africa (gift).
- CONOVER, H. B., Chicago.
10 mallard eggs—Canada (gift).
9 oystercatcher eggs—Chiloé Island, Chile (gift).
- DAVIS DRY GOODS COMPANY, Chicago.
115 fishes, 8 lizards, 19 turtles, 88 snakes, 2 aquaria, 6 snake vivaria, 1 leaf insect—Various localities (gift).
- DAWSON, CHARLES W., Muskogee, Oklahoma.
6 turtles—Muskogee, Oklahoma (gift).
- DICKEY, DONALD R., Pasadena, California.
1 California spotted owl—Humboldt County, California (exchange).
- DITZEL, H. F., Chicago.
1 crane-fly—Chicago (gift).
- DOE, JOHN, Watervliet, Michigan.
1 Baltimore oriole (gift).
- DOHMEN, U. A., Chicago.
1 moth—Chicago (gift).
- DONNELLEY, MRS. R. R., Chicago.
1 immature bald eagle—Chicago (gift).
- EKVALL, ROBERT B., Titao, Kansu, China.
3 salamanders—Kansu, China (gift).
- FIELD MUSEUM OF NATURAL HISTORY.
Collected by O. C. Farrington (Capt. Marshall Field Brazilian Expedition):
1 crab, 2 land shells, 69 insects, 16 toads—Brazil.
Collected by H. C. Holling:
14 mammals—Eldridge, Montana.
Collected by E. S. Riggs, G. F. Sternberg, and J. B. Abbott (Capt. Marshall Field Patagonian Expedition):
2 starfish, 46 shells, 1 beetle, 1 scorpion, 2 frogs, 26 lizards, 17 birds, 80 birds' eggs, 1 rhea nest, 23 mammals—Patagonia.
Collected by C. C. Sanborn (Capt. Marshall Field Chilean Expedition):
266 mammals, 574 birds, 3 fishes, 84 lizards, 9 snakes, 320 frogs and toads, 14 beetles, 3 bugs, 2 spiders, 1 crayfish—Bolivia and Chile.
Collected by C. C. Sanborn and F. J. W. Schmidt:
12 mammals, 25 frogs, 1 salamander, 1 turtle, 1 spider, 1 centipede—Highland Park, Illinois.
Collected by A. C. Weed and L. L. Pray (Capt. Marshall Field Expedition to Texas):
18 mammals, 32 birds, 1 bird's egg, 162 fishes, 117 fish casts, 4 fish skins, 1 turtle, 1 snake, 40 lizards, 13 frogs and toads, 830 insects of various orders—Southern Texas.
Collected by K. P. Schmidt and others:
2 salamanders, 27 frogs and toads, 1 snake—Chicago.
- Purchases:
5 birds—Alberta, Canada.
2 owls—Arizona.
32 mammals—Bolivia.
30 mammals—British Guiana.

- 2160 insects—British New Guinea.
 21 frogs and toads, 11 salamanders,
 5 turtles, 25 snakes, 15 lizards—
 Brownsville, Texas.
 63 birds—Central and South Amer-
 ica and New Guinea.
 25 frogs, 111 salamanders, 12 lizards,
 1 snake, 5 turtles—Charleston,
 South Carolina.
 1 least weasel—Edmonton, Canada.
 297 birds—Europe.
 104 mammals, 49 birds—Europe and
 Asia.
 1 Rocky Mountain sheep—Premont
 County, Wyoming.
 95 fishes—Gainesville, Florida.
 123 fishes—Laurel, Maryland.
 12 newts—Louisiana.
 390 birds—Brazil.
 12 frogs, 25 snakes, 65 lizards, 3 tur-
 tles—Santo Domingo.
 483 birds—South America.
 9 frogs, 2 salamanders, 6 lizards—
 South Carolina.
 77 frogs—Santa Catharina, Brazil.
 2 passenger pigeons—United States.
 15 antelopes, 5 mice, 3 bats, 20 mon-
 keys, 7 baboons, 2 chimpanzees
 —West Africa.
- PONSECA, JOSÉ PINTO DA, São
 Paulo, Brazil.
 16 birds—São Paulo, Brazil (ex-
 change).
- GERHARD, W. J., Chicago.
 23 insects, 1 snake—Illinois and In-
 diana.
- GIRVIN, JOHN, Manistique, Michigan.
 1 eel pout—Manistique, Michigan
 (gift).
- GLYNN, JOHN, Chicago.
 1 red-tailed hawk—Lake County,
 Illinois (gift).
- GUERET, E. N., Chicago.
 8 fishes, 4 salamanders, 8 insects—
 Sawyer County, Wisconsin (gift).
- HALPIN, P., Chicago.
 1 tiger salamander—Riverdale, Illi-
 nois (gift).
- HARE, F. E., Manchester, Iowa.
 7 snakes—Manchester, Iowa (gift).
- HELLMAYR, MRS. C. E., Chicago.
 1 red headed woodpecker—Chicago
 (gift).
- HELLMAYR, DR. C. E., Chicago.
 134 insects—Canada (gift).
- HIGINBOTHAM, BRUCE, Evan-
 ston, Illinois.
 1 pilot black snake—Culver, Indi-
 ana (gift).
- HILL, MRS. FREDERICK, Westmont,
 Illinois.
 1 spider—Westmont, Illinois (gift).
- HINE, ASHLEY, Chicago.
 6 mammals, 2 owls—Alberta, Can-
 ada (gift).
- HOFERER, M. J., St. Stephens, Wyo-
 ming.
 1 magpie—St. Stephens, Wyoming
 (gift).
- HOLLING, H. C., Chicago.
 1 box turtle—Indiana (gift).
- JOHNSEN, CHARLES H., Harvey,
 Illinois.
 1 Baltimore oriole nest—Harvey,
 Illinois (gift).
- KAEMPFER, EMIL, Sanchez, Domini-
 can Republic.
 2 turtle eggs—Dominican Republic
 (gift).
- LILJEBLAD, E., Chicago.
 6 moths—Illinois (gift).
- LINCOLN PARK COMMISSION,
 Chicago.
 1 tayra, 2 squirrel monkeys—Posu-
 to, Peru (gift).
 1 Montana grayling—Bozeman,
 Montana (gift).
 53 fishes—Illinois (gift).
 2 gars—Bellevue, Iowa (gift).
 229 aquarium fishes (gift).
 1 turtle—Kankakee River, Illinois
 (gift).
- LITTLE, LUTHER, Pasadena, Cali-
 fornia.
 2 bats (gift).
- LYON, W. I., Waukegan, Illinois.
 1 house-fly—Waukegan, Illinois (gift).
- MACKINTOSH, L. J., Darjeeling,
 India.
 1 mammal, 7 birds, 1 grasshopper,
 4 bugs, 42 butterflies, 41 moths
 —India (gift).
- MADDREN, A. G., North Chevy Chase,
 Maryland.
 1 rabbit—Bolivia (gift).
- MCCARTY, DR. WILLIAM H., Des
 Moines, Iowa.
 1 porcupine fish—California (gift).

- MCCORMICK, CYRUS, Lake Forest, Illinois.
2 moths—Lake Forest, Illinois (gift).
- MUSEUM OF COMPARATIVE ZOOLOGY, Cambridge, Massachusetts.
2 saimans—South America (exchange).
30 birds—West Indies and South America (exchange).
- MYERS, GEORGE S., Jersey City, New Jersey.
11 fishes—Various localities (exchange).
- NARBO, DR. S., Sandnes, Norway.
7 birds' eggs—Rot Island, Norway (gift).
- NASH, GUY, Wisconsin Rapids, Wisconsin.
1 bug, 1 beetle—Wisconsin Rapids, Wisconsin (gift).
- NATIONAL ASSOCIATION OF AUDUBON SOCIETIES, New York City.
105 bird plumes (gift).
- NATIONAL SOUTHEASTERN UNIVERSITY, Nanking, China.
1 salamander, 5 frogs—Nanking, China (gift).
- NORTON, MRS. G. B., Chicago.
1 ruby-throated hummingbird—Chicago (gift).
- ORTENBURGER, PROF. A. I., Norman, Oklahoma.
4 frogs—Norman, Oklahoma (gift).
- PARKER, J. GRAFTON, Chicago.
380 birds, 43 birds' nests and eggs—Chicago and other localities (gift).
- PERRY, ARMSTRONG, Chicago.
1 photograph of blue racer (gift).
- PINNEO, GEORGE N., Gary, Indiana.
1 prairie rattlesnake—Mineral Springs, Indiana (gift).
- PRAY, L. L., Homewood, Illinois.
1 red bat, 1 screech owl—Chicago (gift).
35 bird lice—Wauconda, Illinois (gift).
- PRINCE, S. FRED, Manhattan, Kansas.
1 ground skink, 1 wasp—Stone County, Missouri (gift).
- PSOTA, DR. F. J., Chicago.
1 fly—Caracas Valley, Venezuela (gift).
- RHEAD, LOUIS, Brooklyn, New York.
2 eastern brook pickerel—Long Island, New York (gift).
- RUDHMANN, Delhi, California.
2 sand crickets—Delhi, California (gift).
- RUECKERT, ARTHUR G., Chicago.
1 great-horned owl—Ringwood, Illinois (exchange).
2 brown bats—Waukegan, Illinois (gift).
1 water snake—Henry, Illinois (gift).
- SANBORN, COLIN C., Evanston, Illinois.
1 pine mouse, 1 tree frog—Highland Park, Illinois (gift).
5 birds—Lake County, Illinois (gift).
- SAN DIEGO SOCIETY OF NATURAL HISTORY, San Diego, California.
2 lizards, 2 Pacific rattlesnakes, 3 red rattlesnakes—San Diego County, California (exchange).
- SCHMIDT, KARL P., Homewood, Illinois.
1 swamp tree frog—Homewood, Illinois (gift).
- STEEN, E. B. and GRAVE, B. H., Crawfordsville, Indiana.
78 salamanders—Crawfordsville, Indiana (gift).
- STERN, LEON, Chicago.
4 turtles—Whitehall, Michigan (gift).
- TERRILL, W. A., Norway, Michigan.
1 hognose snake—Faithorn, Michigan (gift).
- TIMBERS, WILLIAM, Chicago.
3 cave crickets—Barren County, Kentucky (gift).
- TYLER, C. C., Eureka, Florida.
1 beetle—Marion County, Florida (gift).
8 tadpoles, 1 salamander, 1 lizard, 1 snake—Marion County, Florida (Gift).
- TYRRELL, W. B., Maywood, Illinois.
5 ticks, 2 beetles—Wisconsin and Illinois (gift).

- U. S. NATIONAL MUSEUM, Washington, D. C.
1 marsupial—Matchu Picchu, Peru (exchange).
- WADDINGTON, MRS. A. H., Westmount, Illinois.
10 hair worms—Westmount, Illinois (gift).
- WALSH, PATRICK, Chicago.
1 red bat—Chicago (gift).
- WALTERS, L. L., Chicago.
17 frogs—Salamonia, Indiana (gift).
- WEED, A. C., Chicago.
25 insects—Northern Illinois (gift).
- WOLCOTT, A. B., Chicago.
1 louse-fly—Niles, Illinois (gift).
9 frogs, 6 snakes, 1 lizard, 175 insects—Stone County, Missouri (gift).

SECTION OF PHOTOGRAPHY

- BENNETT, MISS HELEN B., Chicago.
16 prints of Indian grave.
- CHALMERS, W. J., Chicago.
30 photographs—Egypt, Algeria and Tunisia.
- FIELD MUSEUM OF NATURAL HISTORY.
Made by Section:
9,602 prints, 1,518 negatives, 651 lantern slides.
Developed for Field Expeditions:
456 negatives.
47 moving picture films.
- FIELD, CAPTAIN MARSHALL, EX-
PEDITIONS.
To China:
25 negatives of actors' costumes.
To British Honduras:
325 negatives of natives, landscapes and general views.
To Brazil:
525 negatives of natives, landscapes and general views.
- HEPPERLEY, J. F., Omaha, Nebraska.
18 prints of Indian pictographs.
- HUNTINGTON LIBRARY AND ART GALLERY.
2 photostat reproductions.
- JONES, ARTHUR B., MALAYAN EXPEDITION.
1 moving picture reel.
- MCCREA, W. S., Chicago.
7 negatives of rock formations.
- PATHE REVIEW, New York City.
1 moving picture reel.
- RYERSON, MARTIN A., Chicago.
58 photographs of racial types of Mexico.
27 photographs of racial types of Korea.
49 photographs of racial types of Melanesia.
10 photographs.
- WINTERNITZ, L., Fort Myers, Florida.
30 photographs of Seminole Indians.
17 prints of Seminole Indians.

THE LIBRARY

LIST OF DONORS AND EXCHANGES

(Accessions are made by exchange, unless otherwise designated)

AFRICA:

- East Africa and Uganda Natural History, Nairobi.
Geological Society, Johannesburg.
Institut d'Égypte, Cairo.
Ministry of Public Works, Cairo.
Natal Museum, Pietermaritzburg.
Natal Technical College, Durban.
Rhodesia Scientific Society, Bulawayo.
Royal Society of South Africa, Cape Town.
Société de Géographie d'Alger.
- Société d'Histoire Naturelle de l'Afrique du Nord, Algeria.
Société des Sciences Naturelles du Maroc, Rabat.
South African Association for the Advancement of Science, Cape Town.
South African Department of Agriculture, Pretoria.
South African Museum, Cape Town.
Transvaal Museum, Pretoria.

ARGENTINA:

Ministerio de Agricultura, Buenos Aires.
 Museo de La Plata.
 Museo Nacional, Buenos Aires.
 Sociedad Científica Argentina, Buenos Aires.
 Sociedad Ornitológica del Plata, Buenos Aires.
 Universidad Nacional de La Plata, Buenos Aires.

AUSTRALIA:

Australian Museum, Sydney.
 Botanic Gardens and Government Domains, Sydney.
 Commonwealth of Australia, Melbourne.
 Department of Agriculture, Adelaide.
 Department of Agriculture, Sydney.
 Department of Agriculture, Wellington.
 Department of Mines, Brisbane.
 Department of Mines, Sydney.
 Field Naturalists' Club, Melbourne.
 Fish Commission of New South Wales, Sydney.
 Forestry Commission, Sydney (gift).
 Geological Survey of Western Australia, Perth.
 Linnean Society of New South Wales, Sydney.
 Melbourne University.
 National Herbarium, Melbourne.
 Ornithological Society of South Australia, Adelaide.
 Public Library, Museum and Art Gallery, Adelaide.
 Public Library, Museum and National Gallery of Victoria, Melbourne.
 Queensland Geological Survey, Brisbane.
 Queensland Museum, Brisbane.
 Royal Geographical Society of Australasia, Brisbane.
 Royal Society of New South Wales, Sydney.
 Royal Society of Queensland, Brisbane.
 Royal Society of South Australia, Adelaide.
 Royal Society of Tasmania, Hobart.
 Royal Society of Western Australia, Perth.
 Royal Zoological and Acclimatisation Society of Victoria, Melbourne.
 South Australian Museum, Adelaide.
 Technological Museum, Sydney.

AUSTRIA:

Naturhistorisches Museum, Vienna.
 Zoologisch-Botanische Gesellschaft, Vienna.
 Zoologisches Institut, Graz.

BELGIUM:

Académie Royale de Belgique, Brussels.
 Jardin Botanique de l'Etat, Brussels.
 Kruidkundig Genootschap Dodonea, Ghent.
 Nederlandsche Phytopathologische (Plantenziekten) Vereniging, Ghent.
 Société de Botanique, Brussels.
 Société Royale d'Archéologie, Brussels.
 Université de Louvain.

BORNEO:

Sarawak Museum.

BRAZIL:

Academia Brasileira de Ciencias, Rio de Janeiro.
 Biblioteca Nacional, Rio de Janeiro.
 Escola Superior de Agricultura e Medicina, Veterinaria, Rio de Janeiro.
 Minister of Foreign Affairs of Brazil, Rio de Janeiro.
 Secretaria da Agricultura, Commercio e Obras Publicas, Sao Paulo.
 Serviço Geologico e Mineralogica, Rio de Janeiro.

BRITISH GUIANA:

Board of Agriculture, Georgetown.
 Royal Agricultural and Commercial Society, Demerara.

CANADA:

Canadian Arctic Expedition, Ottawa (gift).
 Chief Game Guardian of Saskatchewan, Regina.
 Department of Agriculture, Ottawa.
 Department of Agriculture, Victoria.
 Department of Indian Affairs, Ottawa.
 Department of Mines, Ontario, Toronto.
 Department of Mines, Ottawa.
 Department of the Interior, Geological Survey, Ottawa.
 Entomological Society of Ontario, Toronto.
 Hamilton Association.
 Horticultural Societies, Toronto.
 McGill University, Montreal.
 Minister of Education, Ontario, Toronto.
 Nova Scotian Institute of Science, Halifax.
 Provincial Museum, Toronto.
 Provincial Museum, Victoria.
 Royal Canadian Institute, Toronto.
 Royal Society of Canada, Ottawa.
 Société de Géographie, Quebec.
 University of Toronto.

CEYLON:

Colombo Museum.

CHILE:

Ministry of Foreign Affairs, Valparaiso.
Museo de Etnología y Antropología, Santiago.
Museo Nacional de Chile, Santiago.

CHINA:

Botany and Forestry Department, Hong-Kong.
Geological Survey, Peking.
Royal Asiatic Society of North China, Shanghai.
Science Society of China, Shanghai (gift).
University of Nanking.

CZECHO-SLOVAKIA:

Deutscher Naturwissenschaftlich-Medizinischer Verein für Böhmen "Lotos", Prague.
Plant Physiological Laboratory, Prague (gift).
Societas Entomologica Bohemica, Prague.

DENMARK:

K. Bibliotek, Copenhagen.
K. Nordiske Oldskriftselskab, Copenhagen.
Naturhistorisk Forening, Copenhagen.
Royal Society of Northern Antiquaries, Copenhagen.
Société Botanique, Copenhagen.

ECUADOR:

Academia Nacional de Historia, Quito.

FEDERATED MALAY STATES:

Federated Malay States Museum, Kuala Lumpur.
Royal Asiatic Society, Malayan Branch, Singapore.

FIJI ISLANDS:

Fijian Society, Suva.

FINLAND:

Abo Akademi.
Societas pro Fauna et Flora Fennica, Helsingfors.
Suomen Museo, Helsingfors.

FRANCE:

Académie des Sciences, Paris.
École d'Anthropologie, Paris.
Faculté des Sciences, Marseille.
Ministère de l'Instruction Publique, Paris (gift).
Musée Guimet, Paris.

Muséum National d'Histoire Naturelle, Paris.

La Nature, Paris.

Société d'Études Scientifiques, Angers.

Société d'Histoire Naturelle, Toulouse.

Société d'Horticulture, Paris.

Société de Géographie, Paris.

Société des Américanistes, Paris.

Société Linguistique, Paris.

Société Nationale d'Horticulture de France, Paris.

Université de Rennes.

GERMANY:

Bayerische Akademie der Wissenschaften, Munich.

Botanischer Garten und Botanisches Museum, Berlin.

Botanischer Verein der Provinz Brandenburg, Berlin.

Deutsche Dendrologische Gesellschaft, Bonn-Poppelsdorf.

Deutsche Gesellschaft für Anthropologie, Ethnologie und Urgeschichte, Berlin.

Deutsche Morgenländische Gesellschaft, Leipzig.

Deutscher Seefischerei Verein, Berlin.

Deutsches Entomologisches Institut, Berlin.

Geographische Gesellschaft, Hamburg.

Gesellschaft für Erdkunde, Berlin.

Hamburgische Universität.

Hessische Ludwigs-Universität Gießen.

K. Museum für Volkskunde, Berlin.

K. Preussische Akademie der Wissenschaften, Berlin.

K. Universitäts Bibliothek, Marburg.

K. Universitäts Bibliothek, Munich.

K. Zoologisches Anthropologisch-Ethnographisches Museum, Dresden.

K. Zoologisches Museum, Berlin.

Museum für Länder- und Völkerkunde, Stuttgart.

Museum für Völkerkunde, Hamburg.

Naturforschende Gesellschaft, Freiburg.

Naturhistorische Gesellschaft, Nürnberg.

Naturwissenschaftlicher Verein, Karlsruhe.

Naturwissenschaftlicher Verein für Schwaben und Neuburg, Augsburg.

Naturwissenschaftlicher Verein für Steiermark, Graz.

Ornithologische Gesellschaft in Bayern, Munich.

Rheinische Missions-Gesellschaft, Bremen.

Schlesische Gesellschaft für Vaterlandische Cultur, Breslau.
 Senckenbergische Naturforschende Gesellschaft, Frankfurt a. M.
 Thüringischer Botanischer Verein, Weimar.
 Württembergische Gesellschaft zur Förderung der Wissenschaften, Tübingen.
 Zoologisches Museum, Berlin.
 Zoologisches Museum, Hamburg.

GREAT BRITAIN:

Ashmolean Museum, Oxford.
 Ashmolean Natural History Society, Oxford.
 Birmingham Natural History and Philosophical Society.
 Bristol Museum and Gallery.
 British Museum, London.
 British Museum (Natural History), London.
 Cambridge Antiquarian Society.
 Cambridge Philosophical Society.
 Cambridge University.
 Cardiff Naturalists' Society.
 Dove Marine Laboratory, Cullercoats.
 Dumfriesshire and Galloway Natural History and Antiquarian Society, Dumfries.
 Fisheries Board, Edinburgh.
 Geological Society, Edinburgh.
 Geological Society, Liverpool.
 Great Britain Geological Society, London.
 Horniman Museum and Library, London.
 Hull Municipal Museum.
 Imperial Bureau of Entomology, London.
 Japan Society of London.
 Imperial College of Science and Technology, London.
 Lancashire Sea Fisheries Laboratory, Liverpool.
 Linnean Society, London.
 Liverpool Biological Society.
 Manchester Field Naturalists' and Archaeologists' Society.
 Manchester Geographical Society.
 Manchester Literary and Philosophical Society.
 Manchester Museum.
 Marine Biological Association, Plymouth.
 Museum of Practical Geology, London.
 National Library of Wales, Aberystwyth.
 National Museum of Wales, Cardiff.
 Natural History and Philosophical Society, Brighton.
 Natural History Society, Glasgow.

Natural History Society of Northumberland, Durham and Newcastle-on-Tyne, Newcastle.
 Oriental Ceramic Society, London.
 Royal Anthropological Institute of Great Britain and Ireland, London.
 Royal Botanic Gardens, Edinburgh.
 Royal Botanic Gardens, Kew.
 Royal Colonial Institute, London.
 Royal Geographical Society, London.
 Royal Horticultural Society, London.
 Royal Society, London.
 Royal Society of Arts, London.
 Royal Society of Edinburgh.
 South London Entomological and Natural History Society, London.
 Tring Zoological Museum.
 Zoological Society of London.

HUNGARY:

Hungarian Institute of Ornithology, Budapest.
 Magyar Természettudományi Társulat, Budapest.

INDIA:

Anthropological Society, Bombay.
 Archaeological Survey, Allahabad.
 Archaeological Survey, Burma, Rangoon.
 Archaeological Survey, Calcutta.
 Archaeological Survey, Eastern Circle, Patna.
 Archaeological Survey, Frontier Circle, Peshawar.
 Archaeological Department, Madras.
 Archaeological Survey of Burma, Lahore.

MEXICO:

Instituto Geológico de Mexico.
 Museo Nacional de Arqueología, Historia y Etnografía, Mexico.
 Secretaría de Agricultura y Fomento, Dirección de Antropología, Mexico.
 Sociedad Científica "Antonio Alzate," Mexico.
 Sociedad Geológica Mexicana, Mexico.
 Universidad Nacional, Mexico.

NETHERLANDS:

Bataafsch Genootschap der Proefondervindelijke Wijsbegeerte, Rotterdam.
 Directie van den Landbouw, Hague.
 K. Academie van Wetenschappen, Amsterdam.
 K. Instituut voor de Taal-Land-en Volkenkunde van Nederlandsch Indië, Hague.
 K. Nederlandsch Aardrijkundig Genootschap, Amsterdam.
 Nederlandsche Dierkunde Vereeniging, Leiden.

Nederlandsche Handel-Maatschappij,
Amsterdam.
Nederlandsche Phytopathologische
Vereeniging, Wageningen.
Rijks-Ethnographisch Museum, Lei-
den.
Rijks Hoogere Land-Tuin-en Bosch-
bouwschool, Wageningen.
Rijks Museum van Natuurlijke His-
torie, Leiden.
Universiteit van Amsterdam, Biblio-
thek.

NEW ZEALAND:

Acclimatisation Society, Wellington.
Auckland Institute and Museum, Wel-
lington.
Canterbury Museum, Christchurch.
Department of Agriculture, Walling-
ton.
Department of Mines, Wellington.
Dominion Museum, Wellington.
Geological Survey, Wellington.
New Zealand Board of Science and Art,
Wellington.

NORWAY:

Bergen Museum.
Geologisk Museums Bibliothek, Kris-
tiania.
Norges Geologiske Undersokelse, Kris-
tiania.
Physiographiske Forening, Kristiania.
Tromsø Museum.
Zoologiske Museum, Kristiania.

PERU:

Cuerpo de Ingenieros de Minas, Lima.
Sociedad Geografica, Lima.
Universidad Mayor de San Marcos,
Lima.

POLAND:

Academy of Commerce, Warsaw.
Bibliothèque de l'Ecole Supérieure de
Commerce, Warsaw.
Musei Polonici Historiae Naturales,
Warsaw.
Société Botanique de Pologne, War-
saw.

PORTUGAL:

Biblioteca Nacional, Lisbon.
Collegio de San Fiel, Braga.
Instituto de Anatomia, Lisbon.
Société Portugaise des Sciences Nat-
urelles, Lisbon.
Universidade de Lisboa.
Amatic Society of Bengal, Calcutta.
Bihar and Orissa Research Society,
Patna.
Department of Agriculture, Bombay.
Department of Agriculture, Madras.
Department of Agriculture, Poona.
Department of Agriculture, Pusa.

Geological Survey, Calcutta.
Government, Cinchona Plantation,
Calcutta.
Government of India, Calcutta.
Government Museum, Madras.
Indian Museum, Calcutta.
Journal of Indian Botany, Madras.
National Indian Association, Calcutta
(gift).
Nazim College, Archaeological Depart-
ment, Hyderabad.
Royal Botanic Garden, Calcutta.
University of Calcutta.
Zoological Survey of India, Calcutta.

IRELAND:

Belfast Naturalists' Field Club.
Department of Agriculture, Scientific
Investigations, Dublin.
Geological Survey, Dublin.
Royal Irish Academy, Dublin.
Royal Dublin Society.

ITALY:

Istituto Botanica, Università di Pavia.
Istituto Geografico de Agostini,
Novara.
Musei Zoologiae ed Anatomia Com-
parata, Turin.
Museo Civico di Storia Naturale,
Genoa.
R. Accademia delle Scienze di Torino.
R. Accademia Nazionale dei Lincei,
Rome.
R. Orto Botanico Giardino Coloniale,
Palermo.
R. Scuola Superiore di Agricoltura,
Portici.
R. Società Geografica Italiana, Rome.
Società dei Naturalisti, Naples.
Società di Scienze Naturali ed Econo-
miche, Florence.
Società Italiana di Scienze Naturali,
Milan.
Società Romana di Antropologia,
Rome.
Società Toscana di Scienze Naturali,
Pisa.

JAPAN:

Anthropological Society of Tokyo.
Geological Society, Tokyo.
Government Research Institute, Tai-
hoku, Formosa.
Imperial University, Taihoku, For-
mosa.
Imperial University of Tokyo, Col-
lege of Science.
Ornithological Society, Tokyo.
Tokyo Botanical Society.

JAVA:

Bataviaasch Genootschap van Kun-
sten en Wetenschappen, Batavia.

Department of Agriculture, Buitenzorg.

Encyclopaedisch Bureau, Weltevreden.

Jardin Botanique, Weltevreden.

Java Instituut, Weltevreden.

K. Natuurskundige Vereeniging in Nederlandsch-Indië, Weltevreden.

RUSSIA:

Académie Impériale des Sciences, Leningrad.

Botanical Garden, Leningrad.

Société des Naturalistes de Petrograd.

Universität Dorpatensis.

SPAIN:

Collegio de Pasaje, La Guardia.

Institución Catalana d'Historia Natural, Barcelona.

Instituto General y Técnico, Valencia.

Instituto Nacional de Ciencias, Madrid.

Junta de Ciencias Naturales, Barcelona.

Junta para Ampliación de Estudios e Investigaciones Científicas, Madrid.

R. Academia de Ciencias y Arte, Barcelona.

R. Academia de Ciencias Exactas, Físicas y Naturales, Madrid.

Sociedad Española de Historia Natural, Madrid.

SWEDEN:

K. Biblioteket, Stockholm.

K. Svenska Vetenskapsakademien, Stockholm.

K. Vitterhets Historie och Antikvitets Akademien, Stockholm.

Lunds Universitet.

Svenska Sällskapet för Antropologi och Geografi, Stockholm.

Universitet Biblioteket, Upsala.

SWITZERLAND:

Botanischer Garten, Bern.

Botanisches Museum, Zürich.

Conservatoire et Jardin Botaniques, Geneva.

Geographisch-Ethnographische Gesellschaft, Zürich.

Historisches Museum, Bern.

Naturforschende Gesellschaft, Basel.

Naturforschende Gesellschaft, Bern.

Naturforschende Gesellschaft, Zürich.

Musées d'Histoire Naturelle, Lausanne.

Ostschweizerische Geograph-Commerciale Gesellschaft, St. Gallen.

Société de Physique et d'Histoire Naturelle, Geneva.

Société Entomologique, Bern.

Société Fribourgeoise des Sciences Naturelles, Fribourg.

Société Helvétique des Sciences Naturelles, Bern.

Société Neuchâteloise de Géographie, Neuchâtel.

Universität, Bern.

Universität, Botanisches Museum, Zürich.

VENEZUELA:

Cultura Venezolana, Caracas.

WEST INDIES:

Academia Nacional de Artes y Letras, Havana.

Agricultural Experiment Station, Porto Rico.

Biblioteca Nacional, Havana.

Department of Agriculture of Jamaica, Kingston.

Imperial Department of Agriculture, Barbados.

Insular Experiment Station, Rio Piedras.

Liceo de Costa Rica, San José.

Trinidad and Tobago Department of Agriculture, Port of Spain.

Universidad de Habana.

Ahl, Ernst, Berlin.

Altobelle, G., (gift).

Benson, Rex, London (gift).

Brandstetter, Renward, Lucerne (gift).

Carpenter, G. H., Dublin.

Cook, Melville T., Pio Piedras.

Dearness, John, London.

Dunod, H., Paris.

Faura y Sans, M., Tortosa.

Forberg, Elof, Stockholm.

Gamble, J. S., Madras.

Gennep, Arnold van, Paris.

Gleerup, C. W. K., Lund.

Greslebin, Hector, Buenos Aires (gift).

Hammerton, J. A., London (gift).

Helbin, Hugo, Frankfurt a. M. (gift).

Herrera, Moises, Mexico.

Herter, W., Berlin (gift).

Huard, V. A., Quebec.

Kindle, E. M., Ottawa (gift).

Kishenouye, K., Tokyo (gift).

Lavander, L., Paris (gift).

Lehmann, Walter, Berlin (gift).

Loo, C. T., Paris (gift).

MacKenzie, William C., Melbourne.

MacRitchie, David, Edinburgh.

Marelli, Carlos A., Buenos Aires (gift).

Mertens, Robert, Frankfurt a. M.

Miller, David, Wellington (gift).

Nordenskiöld, Erlend, Göteborg (gift).

Porter, Carlos E., Santiago de Chile.

Richter, Rudolf, Frankfurt a. M.
 Rinne, Friedrich, Leipzig (gift).
 Rivet, P., Paris.
 Roig, Mario Sanchez, Havana (gift).
 Roule, Louis, Paris (gift).
 Sapir, E., Ottawa.
 Schinz, Hans, Zürich.
 Schläpfer, Otto, Zürich.
 Schmidt, W., Wien.
 Shirogoroff, S. M., Leningrad (gift).
 Tobler, Leipzig.
 Watson, J. Henry, Manchester (gift).
 Welch, M. B., Sydney.

ALABAMA:

Anthropological Society, Montgomery.

CALIFORNIA:

Agricultural Experiment Station,
 Berkeley.
 Board of Fish and Game Commissioners,
 Sacramento.
 California Academy of Sciences, San
 Francisco.
 Citrus Experiment Station, Riverside.
 Cooper Ornithological Club, Holly-
 wood.
 Natural History Museum, San Diego
 (gift).
 Pomona College, Claremont.
 San Diego Society of Natural History.
 Scripps Institution of Biological Re-
 search, La Jolla.
 Southern Academy of Sciences, Los
 Angeles.
 Southwest Museum, Los Angeles.
 Stanford University.
 State Mining Bureau, Sacramento.
 University of California, Berkeley.

COLORADO:

Bureau of Mines, Denver.
 Colorado College, Colorado Springs.
 Colorado Museum of Natural History,
 Denver.
 Colorado Scientific Society, Denver.
 Colorado University, Boulder.
 State Historical and Natural History
 Society, Denver.

CONNECTICUT:

Agricultural Experiment Station, New
 Haven.
 American Oriental Society, New
 Haven.
 Connecticut Academy of Arts and
 Sciences, New Haven.
 Hartford Public Library.
 Marsh Botanical Garden, New Haven.
 Osborn Botanical Laboratory, New
 Haven.
 Penbody Museum, New Haven.
 State Geological and Natural History
 Survey, Hartford.

Storrs Agricultural Experiment Sta-
 tion.
 Wesleyan University, Middletown.
 Yale University, New Haven.

FLORIDA:

State Geological Survey, Tallahassee.

HAWAII:

Agricultural Experiment Station,
 Honolulu.
 Bernice Pauahi Bishop Museum, Hono-
 lulu.
 Board of Commissioners of Agricul-
 ture and Forestry, Honolulu.
 Hawaiian Entomological Society,
 Honolulu.
 Hawaiian Sugar Planters' Association,
 Honolulu.

IDAHO:

Mining Industry, Boise.
 State Historical Society of Idaho,
 Boise.
 University of Idaho, Moscow.

ILLINOIS:

Agricultural Experiment Station, Ur-
 bana.
 Art Institute of Chicago.
 Audubon Society, Chicago.
 Board of Education, Chicago.
 Chicago Historical Society.
 Chicago Public Library.
 Division of Natural History Survey,
 Urbana.
 Hardwood Record, Chicago (gift).
 John Crerar Library, Chicago.
 Lake Forest College.
 Newberry Library, Chicago.
 Northwestern University, Evanston.
 Open Court Publishing Company, Chi-
 cago.
 State Academy of Science, Springfield.
 State Board of Agriculture, Springfield.
 State Geological Survey, Springfield.
 State Historical Library, Springfield.
 State Water Survey, Springfield.
 Sweet, Wallach and Company, Chi-
 cago (gift).
 University of Chicago.
 University of Illinois, Urbana.

INDIANA:

Academy of Science, Indianapolis.
 Department of Conservation, Indian-
 apolis.
 Indiana University, Bloomington.
 John Herron Art Institute, Indian-
 apolis.
 Legislative Reference Bureau, Indian-
 apolis.
 Purdue University, Lafayette.
 University of Notre Dame.



IMPERIAL STATE ROBE OF THE MANCHU DYNASTY, OF YELLOW SILK WITH
DESIGNS WOVEN IN. CHINA, K'YEN-LUNG PERIOD (1736-95).

CAPTAIN MARSHALL FIELD EXPEDITION TO CHINA, 1923.

About one-twelfth actual size.

IOWA:

Academy of Science, Des Moines.
Horticultural Society, Des Moines.
Iowa Geological Survey, Des Moines.
Iowa State College, Ames.
University of Iowa, Iowa City.

KANSAS:

Academy of Science, Topeka.
Agricultural Experiment Station,
Manhattan.
State Board of Agriculture, Topeka.
State Geological Survey, Lawrence.
State Historical Society, Topeka.
University of Kansas, Lawrence.

KENTUCKY:

Academy of Science, Frankfort.
Agricultural Experiment Station,
Louisville.
Kentucky Geological Survey, Frank-
fort.

LOUISIANA:

Agricultural Experiment Station, Bat-
on Rouge.
Department of Conservation, New
Orleans.
State Museum, New Orleans.

MAINE:

Agricultural Experiment Station,
Orono.
Bowdoin College, Brunswick.

MARYLAND:

Agricultural Experiment Station,
College Park.
Johns Hopkins University, Baltimore.

MASSACHUSETTS:

Agricultural Experiment Station,
Amherst.
American Academy of Arts and Sci-
ences, Boston.
American Antiquarian Society, Wor-
cester.
Boston Public Library.
Boston Society of Natural History.
Children's Museum of Boston, Jama-
ica Plain.
Harvard College, Museum of Compar-
ative Zoology, Cambridge.
Harvard University, Arnold Arbor-
etum, Jamaica Plain.
Harvard University, Gray Herbarium,
Cambridge.
Massachusetts Horticultural Society,
Boston.
Museum of Fine Arts, Boston.
New Bedford Free Public Library.
Peabody Institute.
Peabody Museum, Cambridge.
Peabody Museum, Salem.

Phillips Academy, Andover.
Salem Public Library.
Smith College, Northampton.
Springfield City Library Association.
Springfield Natural History Museum.
Tufts College.
Williams College, Williamstown.

MICHIGAN:

Agricultural Experiment Station,
Agricultural College.
Chamberlain Memorial Museum,
Three Oaks.
Department of Conservation. Geo-
logical Survey Division, Lansing.
Detroit Institute of Art.
Geological and Natural History Sur-
vey, Lansing.
Grand Rapids Public Library.
Michigan Academy of Science, Ann
Arbor.
Michigan College of Mines, Houghton.
Michigan State Library, Lansing.
State Board of Agriculture, Lansing.
State Board of Library Commissions,
Lansing.
University of Michigan, Ann Arbor.

MINNESOTA:

Agricultural Experiment Station,
University Farm.
Minneapolis Institute of Arts.
Minnesota Historical Society, Saint
Paul.
Saint Paul Institute.
State Entomologist, University Farm.
University of Minnesota, Minneapolis.

MISSISSIPPI:

Agricultural Experiment Station,
Agricultural College.
Mississippi State Geological Survey,
Jackson.

MISSOURI:

Agricultural Experiment Station,
Columbia.
Bureau of Geology and Mines, Rolla.
City Art Museum, Saint Louis.
Missouri Botanic Garden, Saint Louis.
Missouri Historical Society, Columbia.
Saint Louis Academy of Science.
Saint Louis Public Library.
Saint Louis University.
University of Missouri. School of
Mines, Rolla.
Washington University, Saint Louis.

MONTANA:

State Board of Horticulture, Missoula.
University of Montana, Missoula.

NEBRASKA:

University of Nebraska, Lincoln.

NEVADA:

Agricultural Experiment Station,
Reno.

NEW JERSEY:

Agricultural Experiment Station,
Trenton.
Department of Conservation and De-
velopment, Trenton.
Newark Museums Association.
Princeton University.

NEW MEXICO:

Historical Society, Santa Fe.
New Mexico Museum, Santa Fe.

NEW YORK:

Agricultural Experiment Station,
Geneva.
American Geographical Society, New
York.
American Museum of Natural History,
New York.
Asia Publishing Company, New York.
Brooklyn Botanic Garden.
Brooklyn Institute of Arts and Sci-
ences.
Buffalo Society of Natural Sciences.
Carnegie Foundation for the Advance-
ment of Teaching, New York (gift).
Cooper Union for the Advancement of
Science and Art, New York.
Cornell University, Ithaca.
Forest and Stream Publishing Com-
pany, New York.
Inter-American Magazine, New York
(gift).
Japan Society, New York.
Metropolitan Museum of Art, New
York.
Museum of the American Indian, New
York.
New York Academy of Sciences, New
York.
New York Botanical Garden, New
York.
New York Historical Society, New
York.
Pratt Institute Free Library, New
York.
Public Library, New York.
Rochester Academy of Science.
Rockefeller Foundation, New York.
State College of Forestry, Syracuse.
State Library, Albany.
State Museum, Albany.
Staten Island Institute of Arts and
Sciences, New York.
Stone Publishing Company, New York.
Syracuse University.
University of the State of New York,
Albany.

Vassar College, Poughkeepsie.
Zoological Society, New York.

NORTH CAROLINA:

Elisha Mitchell Scientific Society,
Chapel Hill.

NORTH DAKOTA:

Historical Society, Grand Forks.
University of North Dakota, Univer-
sity.

OHIO:

Agricultural Experiment Station,
Wooster.
Cincinnati Museum Association.
Cleveland Museum of Art.
Cleveland Museum of Natural His-
tory.
Cleveland Public Library.
Denison University, Granville.
Geological Survey, Columbus.
Ohio Academy of Science, Columbus.
State Archaeological and Historical So-
ciety, Columbus.
State University, Columbus.
University of Cincinnati.
Wilson Ornithological Club, Oberlin.

OKLAHOMA:

University of Oklahoma, Norman.

OREGON:

Agricultural Experiment Station,
Corvallis.
University of Oregon, Eugene.

PENNSYLVANIA:

American Philosophical Society, Phila-
delphia.
Association of Engineering Societies,
Philadelphia.
Bryn Mawr College.
Bureau of Topographic and Geological
Survey, Harrisburg.
Carnegie Institute, Pittsburgh.
Carnegie Library, Pittsburgh.
Carnegie Museum, Pittsburgh.
Dropsie College, Philadelphia.
Engineers' Society of Western Penn-
sylvania, Pittsburgh.
Franklin Institute, Philadelphia.
Numismatic and Antiquarian Society,
Philadelphia.
Pennsylvania Museum and School of
Industrial Art, Philadelphia.
Philadelphia Academy of Natural Sci-
ences.
Philadelphia College of Pharmacy.
Philadelphia Commercial Museum.
Sullivant Moss Society, Pittsburgh.
University of Pennsylvania, Philadel-
phia.

University of Pennsylvania, Museum,
Philadelphia.
Wagner Free Institute of Science, Phil-
adelphia.

PHILIPPINE ISLANDS:

Bureau of Education, Manila.
Department of Agriculture, Manila.
Department of Agriculture and Nat-
ural Resources, Manila.
Department of Interior, Bureau of Sci-
ence, Manila.

RHODE ISLAND:

Park Museum, Providence.

SOUTH CAROLINA:

Charleston Museum.

SOUTH DAKOTA:

Agricultural Experiment Station,
Brookings.
Geological and Natural History Sur-
vey, Vermilion.

TENNESSEE:

Department of Education, Division of
Geology, Nashville.

TEXAS:

Agricultural Experiment Station,
College Station.
Scientific Society of San Antonio,
University of Texas, Austin.

VERMONT:

Agricultural Experiment Station,
Burlington.
State Forester, Montpelier.
State Geological Survey, Burlington.

VIRGINIA:

State Library, Richmond.
University of Virginia, Charlottesville.
Virginia Geological Survey, Charlottes-
ville.

WASHINGTON:

Department of Conservation and De-
velopment, Division of Geology,
Olympia.
Washington Geological Survey, Pull-
man.
Washington University, Seattle.
Washington University, Historical So-
ciety, Seattle.

WASHINGTON, D. C.:

American Association for the Advance-
ment of Science (gift).
American Mining Congress.
Carnegie Institution of Washington
(gift).
Daily Science News Bulletin.
Library of Congress.

National Academy of Sciences.
National Education Association (gift).
National Research Council.
National Zoological Park.
Pan American Union.
Peruvian Arbitration Commission.
Smithsonian Institution.
United States Government.
United States National Museum.

WEST VIRGINIA:

State Department of Agriculture,
Charleston.
West Virginia University Morgan-
town.

WISCONSIN:

Agricultural Experiment Station,
Madison.
Beloit College.
Geological and Natural History Sur-
vey, Madison.
Public Museum of Milwaukee.
State Horticultural Society, Madison.
University of Wisconsin, Madison.

Arthur, J. C., Lafayette.
Ayer, Edward E., Chicago (gift).
Baker, Frank C., Urbana.
Ballard, James F., Saint Louis (gift).
Bishop, Sherman C., Albany (gift).
Blatchley, W. S., Indianapolis.
Brandegge, Townshend S., Berkeley.
Canfield, Frederick A., Dover (gift).
Casey, Thomas L., Washington (gift).
Cassius, S. E., Salem (gift).
Cattell, J. McKean, New York (gift).
Cockerell, T. D. A., Boulder.
Cook, Melville T., Porto Rico.
Davies, D. C., Chicago (gift).
Davis, William T., New Brighton (gift).
DeLong, Dwight M., Columbus (gift).
Dengler, Hermann, New York.
Evans, Alexander W., New Haven.
Farwell, Oliver A., Detroit.
Fassett, Norman C., New Haven (gift).
Field, Stanley, Chicago (gift).
Gates, Frank C., Manhattan (gift).
Gerhard, W. J., Chicago (gift).
Glessner, J. J., Chicago (gift).
Hall, Harvey M., Berkeley (gift).
Harshberger, John W., Philadelphia.
Haynes, Caroline C., Highland (gift).
Heflmayr, C. E., Chicago (gift).
Holland, W. J., Pittsburgh.
Hillson, Willard A., Frankfort (gift).
Keyes, Charles R., Mt. Vernon (gift).
Laufer, Berthold, Chicago (gift).
Lewis, A. B., Chicago (gift).
Love, Charles A., Aurora (gift).
McClintock, Walter, Pittsburgh (gift).
MacGowan, Kenneth, New York.

- McNair, James B., Chicago (gift).
Mansfield, Howard, New York.
Mason, J. Alden, New York (gift).
Mills, William C., Columbus.
Noe, A. C., Chicago.
Osborn, Henry F., New York.
Osborn, Herbert, Columbus.
Osgood, Wilfred H., Chicago (gift).
Pittier, H., Washington.
Prota, Frank J., Chicago (gift).
Record, Samuel J., New Haven (gift).
Reed, Carlos S., Santiago de Chile (gift).
Robb, Mrs. G. W., Borden (gift).
Safford, W. E., Washington (gift).
Saunders, Charles P., Pasadena.
Schmidt, Karl P., Chicago (gift).
Smith, Huron H., Milwaukee (gift).
Sternberg, Charles M., Oakley (gift).
Treadwell, A. L., Poughkeepsie (gift).
Tuthill, Frank H., Chicago (gift).
Tyrrell, W. B., Milwaukee (gift).
Viosca, Percy, Jr., New Orleans (gift).
Wilbour, Victor and Theodora, Brooklyn (gift).

ARTICLES OF INCORPORATION

STATE OF ILLINOIS

DEPARTMENT OF STATE

WILLIAM H. HINRICHSEN, *Secretary of State.*

TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETING:

Whereas, a Certificate duly signed and acknowledged having been filed in the office of the Secretary of State, on the 16th day of September, A. D. 1893, for the organization of the COLUMBIAN MUSEUM OF CHICAGO, under and in accordance with the provisions of "An Act Concerning Corporations," approved April 18, 1872, and in force July 1, 1872, and all acts amendatory thereof, a copy of which certificate is hereto attached.

Now, therefore, I, William H. Hinrichsen, Secretary of State of the State of Illinois, by virtue of the powers and duties vested in me by law, do hereby certify that the said COLUMBIAN MUSEUM OF CHICAGO is a legally organized Corporation under the laws of this State.

In Testimony Whereof, I hereto set my hand and cause to be affixed the Great Seal of State. Done at the City of Springfield, this 16th day of September, in the year of our Lord one thousand eight hundred and ninety-three, and of the Independence of the United States the one hundred and eighteenth.

W. H. HINRICHSEN,
Secretary of State.

[SEAL]

TO HON. WILLIAM H. HINRICHSEN,

SECRETARY OF STATE:

SIR:

We, the undersigned citizens of the United States, propose to form a corporation under an act of the General Assembly of the State of Illinois, entitled "An Act Concerning Corporations," approved April 18, 1872, and all acts amendatory thereof; and that for the purposes of such organization we hereby state as follows, to-wit:

1. The name of such corporation is the "COLUMBIAN MUSEUM OF CHICAGO."

2. The object for which it is formed is for the accumulation and dissemination of knowledge, and the preservation and exhibition of objects illustrating Art, Archaeology, Science and History.

3. The management of the aforesaid museum shall be vested in a Board of FIFTEEN (15) TRUSTEES, five of whom are to be elected every year.

4. The following named persons are hereby selected as the Trustees for the first year of its corporate existence:

Edward E. Ayer, Charles B. Farwell, George E. Adams, George R. Davis, Charles L. Hutchinson, Daniel H. Burnham, John A. Roche, M. C. Bullock, Emil G. Hirsch, James W. Ellsworth, Allison V. Armour, O. F. Aldis, Edwin Walker, John C. Black and Frank W. Gunsaulus.

5. The location of the Museum is in the City of Chicago, County of Cook, and State of Illinois.

(Signed),

George E. Adams, C. B. Farwell, Sidney C. Eastman, F. W. Putnam, Robert McCurdy, Andrew Peterson, L. J. Gage, Charles L. Hutchinson, Ebenezer Buckingham, Andrew McNally, Edward E. Ayer, John M. Clark, Herman H. Kohlstaet, George Schneider, Henry H. Getty, William R. Harper, Franklin H. Head, E. G. Keith, J. Irving Pearce, Azel F. Hatch, Henry Wade Rogers, Thomas B. Bryan, L. Z. Leiter, A. C. Bartlett, A. A. Sprague, A. C. McClurg, James W. Scott, Geo. F. Bissell, John R. Walsh, Chas. Fitzsimmons, John A. Roche, E. B. McCagg, Owen F. Aldis, Ferdinand W. Peck, James H. Dole, Joseph Stockton, Edward B. Butler, John McConnell, R. A. Waller, H. C. Chatfield-Taylor, A. Crawford, Wm. Sooy Smith, P. S. Peterson, John C. Black, Jno. J. Mitchell, C. F. Gunther, George R. Davis, Stephen A. Forbes, Robert W. Patterson, Jr., M. C. Bullock, Edwin Walker, George M. Pullman, William E. Curtis, James W. Ellsworth, William E. Hale, Wm. T. Baker, Martin A. Ryerson, Huntington W. Jackson, N. B. Ream, Norman Williams, Melville E. Stone, Bryan Lathrop, Eliphalet W. Blatchford, Philip D. Armour.

STATE OF ILLINOIS }
COOK COUNTY } ss.

I, G. R. MITCHELL, a NOTARY PUBLIC in and for said County, do hereby certify that the foregoing petitioners personally appeared before me and acknowledged severally that they signed the foregoing petition as their free and voluntary act for the uses and purposes therein set forth.

Given under my hand and notarial seal this 14th day of September, 1893.

[SEAL]

G. R. MITCHELL,
NOTARY PUBLIC, COOK COUNTY, ILL.

CHANGE OF NAME.

Pursuant to a resolution passed at a meeting of the corporate members held the 25th day of June, 1894, the name of the COLUMBIAN MUSEUM was changed to FIELD COLUMBIAN MUSEUM. A certificate to this effect was filed June 26, 1894, in the office of the Secretary of State for Illinois.

CHANGE OF NAME.

Pursuant to a resolution passed at a meeting of the corporate members held the 8th day of November, 1905, the name of the FIELD COLUMBIAN MUSEUM was changed to FIELD MUSEUM OF NATURAL HISTORY. A certificate to this effect was filed November 10, 1905, in the office of the Secretary of State for Illinois.

CHANGE IN ARTICLE 3.

Pursuant to a resolution at a meeting of the corporate members held the 10th day of May, 1920, the management of FIELD MUSEUM OF NATURAL HISTORY shall be invested in a Board of TWENTY-ONE (21) TRUSTEES, who shall be elected in such manner and for such time and term of office as may be provided for by the By-Laws. A certificate to this effect was filed May 21, 1920, in the office of the Secretary of State for Illinois.

AMENDED BY-LAWS

JANUARY 1925

ARTICLE I.

MEMBERS

SECTION 1. Members shall be of ten classes, Corporate Members, Honorary Members, Patrons, Benefactors, Fellows, Life Members, Non-Resident Life Members, Associate Members, Sustaining Members, and Annual Members.

SECTION 2. The Corporate Members shall consist of the persons named in the articles of incorporation, and of such other persons as shall be chosen from time to time by the Board of Trustees at any of its meetings, upon the recommendation of the Executive Committee: provided, that such person named in the articles of incorporation shall, within ninety days from the adoption of these By-Laws, and persons hereafter chosen as Corporate Members shall, within ninety days of their election, pay into the treasury the sum of twenty (\$20.00) dollars or more. Corporate Members becoming Life Members, Patrons or Honorary Members shall be exempt from dues. Annual meetings of said Corporate Members shall be held at the same place and on the same day that the annual meeting of the Board of Trustees is held.

SECTION 3. Honorary Members shall be chosen by the Board from among persons who have rendered eminent service to science, and only upon unanimous nomination of the Executive Committee. They shall be exempt from all dues.

SECTION 4. Patrons shall be chosen by the Board upon recommendation of the Executive Committee from among persons who have rendered eminent service to the Museum. They shall be exempt from all dues, and, by virtue of their election as Patrons, shall also be Corporate Members.

SECTION 5. Any person contributing or devising the sum of One Hundred Thousand Dollars (\$100,000.00) in cash, or securities, or property to the funds of the Museum, may be elected a Benefactor of the Museum.

SECTION 6. Any person contributing the sum of Five Thousand Dollars (\$5,000.00) in cash or securities to the funds of the Museum, may be elected a Fellow of the Museum, who after being so elected shall have the right in perpetuity to appoint the successor in said Fellowship.

SECTION 7. Any person paying into the treasury the sum of Five Hundred Dollars (\$500.00), at any one time, shall, upon the unanimous vote of the Board, become a Life Member. Life Members shall be exempt from all dues, and shall enjoy all the privileges and courtesies of the Museum that are accorded to members of the Board of Trustees. Any person residing fifty miles or more from the city of Chicago, paying into the treasury the sum of One Hundred Dollars (\$100.00) at any one time, shall, upon the unanimous vote of the Board, become a Non-Resident Life Member. Non-Resident Life Members shall be exempt from all dues, and shall enjoy all the privileges and courtesies of the Museum that are accorded to members of the Board of Trustees.

SECTION 8. Any person paying into the treasury of the Museum the sum of one hundred (\$100.00) dollars, at any one time, shall upon the unanimous

vote of the Board, become an Associate Member. Associate Members shall be entitled to: tickets admitting member and members of family, including non-resident home guests; all publications of the Museum, if so desired; reserved seats for all lectures and entertainments under the auspices of the Museum, provided reservation is requested in advance; and admission of holder of membership and accompanying party to all special exhibits and Museum functions day or evening.

SECTION 9. Sustaining Member shall consist of such persons as are selected from time to time by the Board of Trustees at any of its meetings, and who shall pay an annual fee of twenty-five (\$25.00) dollars, payable within thirty days after notice of election and within thirty days after each recurring annual date. This Sustaining Membership entitles the member to free admission for the member and family to Museum on any day and allows 25 admission coupons, which may be used by any one, the Annual Report and such other Museum documents or publications as may be requested in writing. When a Sustaining Member has paid the annual fee of \$25.00 for six years, such member shall be entitled to become an Associate Member.

SECTION 10. Annual Members shall consist of such persons as are selected from time to time by the Board of Trustees at any of its meetings, and who shall pay an annual fee of ten (\$10.00) dollars, payable within thirty days after each recurring annual date. An Annual Membership shall entitle the member to a card of admission for the member and family during all hours when the Museum is open to the public, and free admission for the member and family to all Museum lectures or entertainments. This membership will also entitle the holder to the courtesies of the membership privileges of every Museum of note in the United States and Canada, so long as the existing system of co-operative interchange of membership tickets shall be maintained, including tickets for any lectures given under the auspices of any of the Museums during a visit to the cities in which the co-operative museums are located.

SECTION 11. All membership fees, excepting Sustaining and Annual, shall hereafter be applied to a permanent Membership Endowment Fund, the interest only of which shall be applied for the use of the Museum as the Board of Trustees may order.

ARTICLE II.

BOARD OF TRUSTEES

SECTION 1. The Board of Trustees shall consist of twenty-one members. The respective members of the Board now in office, and those who shall hereafter be elected, shall hold office during life. Vacancies occurring in the Board shall be filled at a regular meeting of the Board, upon the nomination of the Executive Committee made at a preceding regular meeting of the Board, by a majority vote of the members of the Board present.

SECTION 2. Regular meetings of the Board shall be held on the third Monday of each month. Special meetings may be called at any time by the President, and shall be called by the Secretary upon the written request of three Trustees. Five Trustees shall constitute a quorum, except for the election of officers or the adoption of the Annual Budget, when seven Trustees shall be required, but meetings may be adjourned by any less number from day to day, or to a day fixed, previous to the next regular meeting.

SECTION 3. Reasonable written notice, designating the time and place of holding meetings, shall be given by the Secretary.

ARTICLE III.

HONORARY TRUSTEES

SECTION 1. As a mark of respect, and in appreciation of services performed for the Institution, those Trustees who by reason of inability, on account of



COMPLETE SKELETON OF FOSSIL MAMMAL (*Urocyon barbouri*),
SANTA CRUZ BEDS, PATAGONIA.
CAPTAIN MARSHALL FIELD PALEONTOLOGICAL EXPEDITION TO ARGENTINA, 1923.
Two-fifths actual size.

change of residence, or for other cause or from indisposition to serve longer in such capacity shall resign their place upon the Board, may be elected, by a majority of those present at any regular meeting of the Board, an Honorary Trustee for life. Such Honorary Trustee will receive notice of all meetings of the Board of Trustees, whether regular or special, and will be expected to be present at all such meetings and participate in the deliberations thereof, but an Honorary Trustee shall not have the right to vote.

ARTICLE IV.

OFFICERS

SECTION 1. The officers shall be a President, a First Vice-President, a Second Vice-President, a Third Vice-President, a Secretary, an Assistant Secretary and a Treasurer. They shall be chosen by ballot by the Board of Trustees, a majority of those present and voting being necessary to elect. The President, the First Vice-President, the Second Vice-President, and the Third Vice-President shall be chosen from among the members of the Board of Trustees. The meeting for the election of officers shall be held on the third Monday of January of each year, and shall be called the Annual Meeting.

SECTION 2. The officers shall hold office for one year, or until their successors are elected and qualified, but any officer may be removed at any regular meeting of the Board of Trustees by a vote of two-thirds of all the members of the Board. Vacancies in any office may be filled by the Board at any meeting.

SECTION 3. The officers shall perform such duties as ordinarily appertain to their respective offices, and such as shall be prescribed by the By-Laws, or designated from time to time by the Board of Trustees.

ARTICLE V.

THE TREASURER

SECTION 1. The Treasurer shall be custodian of the funds of the Corporation except as hereinafter provided. He shall make disbursements only upon warrants drawn by the Director and countersigned by the President. In the absence or inability of the Director, warrants may be signed by the Chairman of the Finance Committee, and in the absence or inability of the President, may be countersigned by one of the Vice-Presidents, or any member of the Finance Committee.

SECTION 2. The securities and muniments of title belonging to the corporation shall be placed in the custody of some Trust Company of Chicago to be designated by the Board of Trustees, which Trust Company shall collect the income and principal of said securities as the same become due, and pay same to the Treasurer, except as hereinafter provided. Said Trust Company shall allow access to and deliver any or all securities or muniments of title to the joint order of the following officers, namely The President or one of the Vice-Presidents, jointly with the Chairman, or one of the Vice-Chairmen, of the Finance Committee of the Museum.

SECTION 3. The Treasurer shall give bond in such amount, and with such sureties as shall be approved by the Board of Trustees.

SECTION 4. The Harris Trust & Savings Bank of Chicago shall be Custodian of "The N. W. Harris Public School Extension of Field Museum" fund. The bank shall make disbursements only upon warrants drawn by the Director and countersigned by the President. In the absence or inability of the Director, warrants may be signed by the Chairman of the Finance Committee, and in the absence or inability of the President, may be countersigned by one of the Vice-Presidents, or any member of the Finance Committee.

ARTICLE VI.

THE DIRECTOR

SECTION 1. The Board of Trustees shall elect a Director of the Museum, who shall remain in office until his successor shall be elected. He shall have immediate charge and supervision of the Museum, and shall control the operations of the Institution, subject to the authority of the Board of Trustees and its Committees. The Director shall be the official medium of communication between the Board, or its Committees, and the scientific staff and maintenance force.

SECTION 2. There shall be four scientific departments of the Museum—Anthropology, Botany, Geology and Zoology; each under the charge of a Curator, subject to the authority of the Director. The Curators shall be appointed by the Board upon the recommendation of the Director, and shall serve during the pleasure of the Board. Subordinate staff officers in the scientific departments shall be appointed and removed by the Director upon the recommendation of the Curators of the respective Departments. The Director shall have authority to employ and remove all other employees of the Museum.

SECTION 3. The Director shall make report to the Board at each regular meeting, recounting the operations of the Museum for the previous month. At the Annual Meeting, the Director shall make an Annual Report, reviewing the work for the previous year, which Annual Report shall be published in pamphlet form for the information of the Trustees and Members, and for free distribution in such number as the Board may direct.

ARTICLE VII.

AUDITOR

SECTION 1. The Board shall appoint an Auditor, who shall hold his office during the pleasure of the Board. He shall keep proper books of account, setting forth the financial condition and transactions of the Corporation, and of the Museum, and report thereon at each regular meeting, and at such other times as may be required by the Board. He shall certify to the correctness of all bills rendered for the expenditure of the money of the Corporation.

ARTICLE VIII.

COMMITTEES

SECTION 1. There shall be five Committees, as follows: Finance, Building, Auditing, Pension and Executive.

SECTION 2. The Finance Committee shall consist of five members, the Auditing and Pension Committees shall each consist of three members, and the Building Committee shall consist of five members. All members of these four Committees shall be elected by ballot by the Board at the Annual Meeting, and shall hold office for one year, and until their successors are elected and qualified. In electing the members of these Committees, the Board shall designate the Chairman and Vice-Chairman by the order in which the members are named in the respective Committee; the first member named shall be Chairman, the second named the Vice-Chairman, and the third named, Second Vice-chairman, succession to the Chairmanship being in this order in the event of the absence or disability of the Chairman.

SECTION 3. The Executive Committee shall consist of the President of the Board, the Chairman of the Finance Committee, the Chairman of the Building Committee, the Chairman of the Auditing Committee, the Chairman of the Pension Committee, and three other members of the Board to be elected by ballot at the Annual Meeting.

SECTION 4. Four members shall constitute a quorum of the Executive Committee, and in all standing Committees two members shall constitute a quorum. In the event that, owing to the absence or inability of members, a quorum of the regularly elected members cannot be present at any meeting of any Committee, then the Chairman thereof, or his successor, as herein provided, may summon any members of the Board of Trustees to act in place of the absentee.

SECTION 5. The Finance Committee shall have supervision of investing the endowment and other permanent funds of the Corporation, and the care of such real estate as may become its property. It shall have authority to invest, sell, and reinvest funds, subject to the approval of the Board.

SECTION 6. The Building Committee shall have supervision of the construction, reconstruction, and extension of any and all buildings used for Museum purposes.

SECTION 7. The Executive Committee shall be called together from time to time as the Chairman may consider necessary, or as he may be requested to do by three members of the Committee, to act upon such matters affecting the administration of the Museum as cannot await consideration at the Regular Monthly Meetings of the Board of Trustees. It shall, before the beginning of each fiscal year, prepare and submit to the Board an itemized Budget, setting forth the probable receipts from all sources for the ensuing year, and make recommendations as to the expenditures which should be made for routine maintenance and fixed charges. Upon the adoption of the Budget by the Board, the expenditures as stated are authorized.

SECTION 8. The Auditing Committee shall have supervision over all accounting and bookkeeping, and full control of the financial records. It shall cause the same, once each year, or oftener, to be examined by an expert individual or firm, and shall transmit the report of such expert individual or firm to the Board at the next ensuing regular meeting after such examination shall have taken place.

SECTION 9. The Pension Committee shall determine by such means and processes as shall be established by the Board of Trustees to whom and in what amount the Pension Fund shall be distributed. These determinations or findings shall be subject to the approval of the Board of Trustees.

SECTION 10. The Chairman of each Committee shall report the acts and proceedings thereof at the next ensuing regular meeting of the Board.

SECTION 11. The President shall be ex-officio a member of all Committees and Chairman of the Executive Committee. Vacancies occurring in any Committee may be filled by ballot at any regular meeting of the Board.

ARTICLE IX.

NOMINATING COMMITTEE

SECTION 1. At the November meeting of the Board each year, a Nominating Committee of three shall be chosen by lot. Said Committee shall make nominations for membership of the Finance Committee, the Building Committee, the Auditing Committee, and the Pension Committee, and for three members of the Executive Committee, from among the Trustees, to be submitted at the ensuing December meeting and voted upon at the following Annual Meeting in January.

ARTICLE X.

SECTION 1. Whenever the word "Museum" is employed in the By-Laws of the Corporation, it shall be taken to mean the building in which the Museum

as an Institution is located and operated, the material exhibited, the material in study collections, or in storage, furniture, fixtures, cases, tools, records, books, and all appurtenances of the Institution and the workings, researches, installations, expenditures, field work, laboratories, library, publications, lecture courses, and all scientific and maintenance activities.

SECTION 2. These By-Laws may be amended at any regular meeting of the Board of Trustees by a two-thirds vote of all the members present, provided the amendment shall have been proposed at a preceding regular meeting.

HONORARY MEMBERS

AYER, EDWARD E.
 AYER, MRS. EDWARD E.
 BLACKSTONE, MRS. T. B.
 CHALMERS, WILLIAM J.
 CRANE, CHARLES R.
 FIELD, MARSHALL
 FIELD, STANLEY

GRAHAM, ERNEST R.
 HARRIS, ALBERT W.
 JONES, ARTHUR B.
 McCORMICK, STANLEY
 RYERSON, MARTIN A.
 SIMPSON, JAMES
 SPRAGUE, ALBERT A.

PATRONS

ARMOUR, ALLISON V.
 BUTLER, EDWARD B.
 COLLINS, ALFRED M.
 CUMMINGS, MRS. ROBERT F.
 DAY, LEE GARNETT
 KELLEY, WILLIAM V.

KENNEDY, VERNON SHAW
 KUNZ, GEORGE F.
 MARKHAM, CHARLES H.
 PAYNE, JOHN BARTON
 PROBST, EDWARD
 SARGENT, HOMER E.

WHITE, HOWARD J.

DECEASED 1924

ANDERSON, PEIRCE
 HUTCHINSON, CHARLES L.

MANIERRE, GEORGE
 SMITH, WILLARD A.

CORPORATE MEMBERS

| | |
|--------------------------|----------------------|
| ALDIS, OWEN F. | HARRIS, ALBERT W. |
| ARMOUR, ALLISON V. | JONES, ARTHUR B. |
| AYER, EDWARD E. | KEEP, CHAUNCEY |
| BLAIR, WATSON F. | KELLEY, WILLIAM V. |
| BORDEN, JOHN | KENNEDY, VERNON SHAW |
| BUTLER, EDWARD B. | KUNZ, GEORGE F. |
| BYRAM, HARRY E. | McCORMICK, CYRUS H. |
| CHALMERS, W. J. | MARKHAM, CHARLES H. |
| CHATFIELD-TAYLOR, H. C. | MITCHELL, JOHN J. |
| COLLINS, ALFRED M. | PAYNE, JOHN BARTON |
| CRANE, JR., RICHARD T. | PORTER, GEORGE F. |
| CUMMINGS, MRS. ROBERT F. | PROBST, EDWARD |
| DAVIES, D. C. | RYERSON, MARTIN A. |
| DAY, LEE GARNETT | SARGENT, HOMER E. |
| EASTMAN, SIDNEY C. | SIMPSON, JAMES |
| ELLSWORTH, JAMES W. | SMITH, SOLOMON A. |
| FIELD, MARSHALL | SPRAGUE, ALBERT A. |
| FIELD, STANLEY | STONE, MELVILLE E. |
| GAGE, LYMAN J. | STRAWN, SILAS H. |
| GRAHAM, ERNEST R. | WHITE, HOWARD J. |
| WRIGLEY, JR., WILLIAM | |

DECEASED 1924

| | |
|------------------------|--------------------|
| ANDERSON, PEIRCE | MANIERRE, GEORGE |
| HUTCHINSON, CHARLES L. | PECK, FERDINAND W. |
| KOHLSAAT, HERMAN H. | SMITH, WILLARD A. |

LIFE MEMBERS

ABBOTT, ROBERT S.
ALDIS, ARTHUR T.
ALDIS, OWEN F.
ALEXANDER, WILLIAM A.
ALLERTON, ROBERT H.
AMES, JAMES C.
AMES, KNOWLTON L.
ARMOUR, ALLISON V.
ARMOUR, A. WATSON
ARMOUR, J. OGDEN
ARMOUR, LESTER
AVERY, SEWELL L.
AYER, EDWARD E.

BABCOCK, FRED'K. R.
BAKER, MISS ISABELLE
BANCROFT, EDGAR A.
BANKS, ALEXANDER F.
BARRELL, FINLEY
BARRETT, MRS. A. D.
BARRETT, ROBERT L.
BASSFORD, LOWELL C.
BECKER, A. G.
BILLINGS, C. K. G.
BILLINGS, FRANK
BLACKSTONE, MRS. T. B.
BLAINE, MRS. EMMONS
BLAIR, HENRY A.
BLAIR, WATSON F.
BLOCK, P. D.
BOOTH, W. VERNON
BORDEN, JOHN
BORLAND, CHAUNCEY B.
BREWSTER, WALTER S.
BRIDGE, NORMAN
BROWN, WILLIAM L.
BUCHANAN, D. W.
BUFFINGTON, EUGENE J.
BURNHAM, JOHN
BUTLER, EDWARD B.
BYRAM, HARRY E.

CARPENTER, A. A.
CARPENTER, BENJ.
CARR, ROBERT F.
CARRY, EDWARD F.

CARTON, L. A.
CHALMERS, WILLIAM J.
CLARK, EUGENE B.
CLAY, JOHN
CLOW, WILLIAM E.
COBE, IRA M.
CONOVER, H. BOARDMAN
COPLEY, COL. IRA CLIFF (N.R.)
CRAMER, CORWITH
CRAMER, E. W.
CRAMER, MRS. KATHARINE S.
CRANE, CHARLES RICHARD
CRANE, JR., RICHARD T.
CROSSETT, EDWARD C.
CROWELL, H. P.
CUDAHY, JOSEPH M.
CUMMINGS, D. MARK
CUNNINGHAM, FRANK S.
CUTTEN, ARTHUR W.

DAU, J. J.
DAWES, CHARLES G.
DAY, ALBERT M.
DECKER, ALFRED
DEERING, CHARLES
DEERING, JAMES
DEFREES, JOSEPH H.
DELANO, FREDERIC A.
DICK, ALBERT BLAKE
DIERSSEN, FERDINAND W.
DONNELLEY, REUBEN H.
DONNELLEY, THOMAS E.
DOUGLAS, JAMES H.
DRAKE, JOHN B.
DRAKE, TRACY C.

ECKHART, B. A.
EDMUNDS, PHILIP S.

FAIR, ROBERT M.
FARNUM, HENRY W.
FARR, MISS SHIRLEY
FARWELL, ARTHUR L.
FARWELL, FRANCIS C.
FARWELL, JOHN V.

FARWELL, WALTER
 FAY, C. N.
 FELT, DORR E.
 FENTON, HOWARD W.
 FERGUSON, LOUIS A.
 FERNALD, GUSTAVUS S.
 FERRY, MRS. ABBY FARWELL
 FIELD, II, JOSEPH NASH
 FIELD, MARSHALL
 FIELD, MRS. SARA CARROLL
 FIELD, STANLEY
 FINLEY, WILLIAM H.
 FLEMING, JOHN C.
 FORGAN, DAVID R.
 FORSYTH, ROBERT
 FYFFE, COLIN C. H.

GARTZ, A. F.
 GETZ, GEORGE F.
 GLESSNER, JOHN J.
 GODDARD, LEROY A.
 GOODMAN, WILLIAM O.
 GOODRICH, A. W.
 GRAHAM, ERNEST R.
 GRISCOM, CLEMENT A.

HAMILL, ERNEST A.
 HARRIS, ALBERT W.
 HASKELL, FREDERICK T.
 HASTINGS, SAMUEL M.
 HIBBARD, FRANK
 HILL, LOUIS W.
 HINDE, THOMAS W.
 HIPBACH, LOUIS A.
 HOPKINS, J. M.
 HOPKINS, L. J.
 HOROWITZ, L. J.
 HOYT, N. LONDON
 HUGHITT, MARVIN
 HULBURD, CHARLES H.

INSULL, SAMUEL

JELKE, JOHN F.
 JELKE, JR., JOHN F.
 JOHNSON, MRS. ELIZABETH
 AYER
 JONES, ARTHUR B.
 JONES, THOMAS D.

KEEP, CHAUNCEY
 KELLER, THEODORE C.
 KELLEY, MRS. DAPHNE FIELD
 KELLEY, RUSSELL P.
 KELLEY, WILLIAM V.
 KING, CHARLES GARFIELD
 KING, FRANCIS
 KING, JAMES G.
 KIRK, WALTER RADCLIFFE
 KITTLE, C. M.
 KNICKERBOCKER, C. K.
 KUPPENHEIMER, LOUIS B.

LAMONT, ROBERT P.
 LAWSON, VICTOR F.
 LONDON, MRS. JESSIE
 SPALDING (N.R.)
 LEHMANN, E. J.
 LEONARD, CLIFFORD M.
 LINN, W. R.
 LOGAN, SPENCER H.
 LORD, JOHN B.
 LOWDEN, FRANK O.
 LYTTON, HENRY C.

MacDOWELL, CHARLES H.
 MacVEAGH, FRANKLIN
 MARK, CLAYTON
 MARKHAM, CHARLES H.
 MARSHALL, BENJAMIN H.
 MARTIN, WILLIAM P.
 MASON, WILLIAM S.
 McCORMICK, CYRUS H.
 McCORMICK, HAROLD F.
 McCORMICK, STANLEY
 McELWEE, ROBERT H.
 McINNERNEY, THOS. H.
 McKINLAY, JOHN
 McKINLOCK, GEORGE
 ALEXANDER
 McLAUGHLIN, FREDERIC
 McLAUGHLIN, GEO. D.
 McLENNAN, D. R.
 McNULTY, T. J.
 McWILLIAMS, LAFAYETTE
 MEYNE, GERHARDT F.
 MINER, W. H.
 MITCHELL, JOHN J.
 MOORE, EDWARD S.

TYPE OF CASE LOANED TO THE SCHOOLS OF CHICAGO BY THE N. W. HARRIS PUBLIC SCHOOL EXTENSION OF
FIELD MUSEUM OF NATURAL HISTORY.

One-eighth actual size.

MORSE, JR., CHARLES H.
MORTON, JOY
MORTON, MARK
MUNROE, CHARLES A.

NEWELL, A. B.
NIKOLAS, G. J.
NOEL, JOSEPH R.

O'BRIEN, JOHN J.
ORR, ROBERT M.

PALMER, HONORE
PALMER, POTTER
PAM, MAX
PATTEN, HENRY J.
PATTEN, MRS. JAMES A.
PATTERSON, JOSEPH M.
PAYNE, JOHN BARTON
PAYSON, GEORGE S.
PEABODY, AUGUSTUS S.
PICK, ALBERT
PIERCE, CHARLES I.
PIEZ, CHARLES
PIKE, CHARLES B.
PIKE, EUGENE R.
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PORTER, GEORGE F.
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PORTER, H. H.

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SCOTT, JOHN W.
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SMITH, SOLOMON A.
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 REYNOLDS, EARLE H.
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SENG, J. T.
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SHELTON, DR. W. EUGENE
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SMITH, FRANKLIN P.
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WILLIAMS, GAAR
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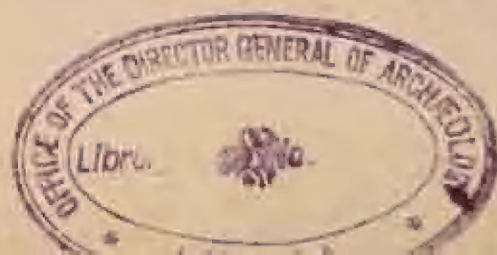
WOLFF, GEORGE F.
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YOUNG, GEORGE H.
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ARMOUR, GEORGE A.
COMSTOCK, WILLIAM C.
FOIN, CHIN F.
GREENLEAF, GARDNER
HARTER, GUSTAV A.

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A TRUSTEE OF THE MUSEUM AND PATRON OF THE
SIMPSON-ROOSEVELT EXPEDITION, 1925-1926.

FIELD MUSEUM OF NATURAL HISTORY

PUBLICATION 235

REPORT SERIES

VOL. VI, No. 5

ANNUAL REPORT OF THE
DIRECTOR

TO THE
BOARD OF TRUSTEES

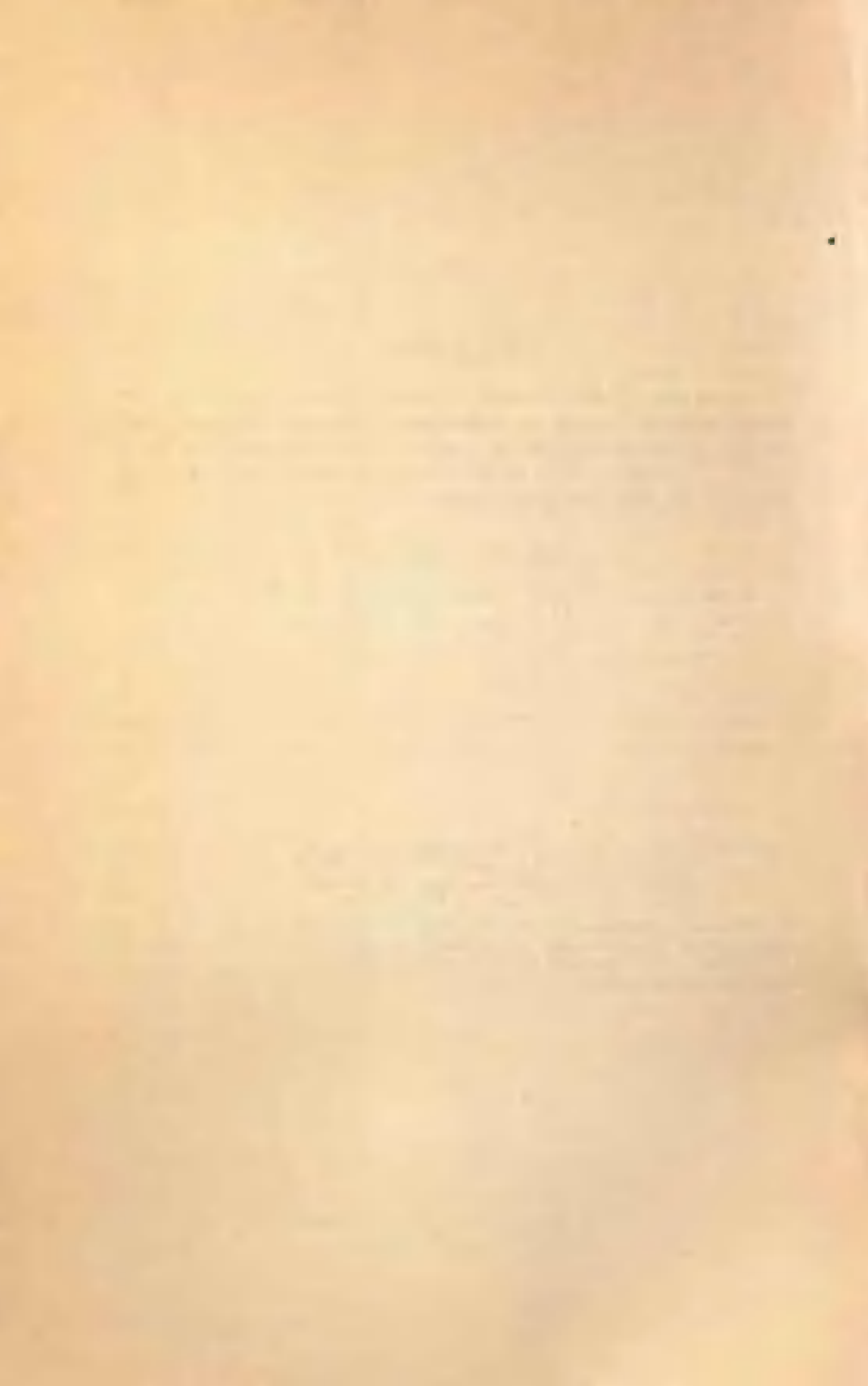
FOR THE YEAR 1925



CHICAGO, U. S. A.

January, 1926





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ANNUAL REPORT OF THE DIRECTOR

1925

To the Trustees of Field Museum of Natural History:

I have the honor to present a report of the operations of the Museum for the year ending December 31, 1925.

Throughout the year, the Museum has so maintained its activities that public attendance has been notably increased. Frequent mention in the public press of the progress of the Institution and of its expeditions, researches and accessions has doubtless been of much aid in increasing popular interest and attendance. This interest has, in turn, served to stimulate the members of the scientific and administrative staff to more strenuous efforts.

As is indicated in the following report, the activities and functions of the Museum are ever widening. This is especially true in the advancement of educational work. During the period under review an additional extramural program has been inaugurated which provides for assigning lecturers from the Museum to various parts of the city. On account of the addition of this and other educational and research programs to the activities of the Museum the year's budget shows a deficit of \$35,806.01. Although the Museum has received memorable contributions to its endowment for the purpose of defraying the cost of its enhanced activities, income from these sources is not as yet available. Moreover, despite the increased income provided by the South Park Commissioners from the tax levy, it does not suffice to meet the actual cost of maintenance.

The hearty appreciation by the public of the enlarged activities of the Museum has produced a demand for service greater than can be met with the present endowment. With an increased endowment, more entertainment for adults, enlarged facilities for children and students, and a very desirable extension of the educational program to include, specifically, the foreign born, could be provided.

The largest single gift received by the Museum during the year was that of Mrs. Anna Louise Raymond, consisting of an endowment of \$500,000 and creating a memorial to her husband, the late James Nelson Raymond. The purpose of this fund is indicated in its name, "The James Nelson and Anna Louise Raymond Public School and Children's Lecture Fund." The income from this endowment is paid as an annuity

during her lifetime to Mrs. Raymond. Annuities on endowments of this nature to the Institution are exempt from income tax levies and are also guaranteed against fluctuation in amount. An exhibition hall has been named James Nelson and Anna Louise Raymond Hall to commemorate this gift.

Securities to the value of \$100,000 were transferred to the Museum by Miss Kate Buckingham, who receives as an annuity the interest on her gift. By action of the Board of Trustees, an exhibition hall has been named in memory of the late Clarence Buckingham.

The conception of the James Simpson-Roosevelt Asiatic Expedition to the Himalayas, the Pamirs and Turkestan for zoological specimens lay with the Messrs. Roosevelt, Theodore and Kermit, who undertook to furnish their services without remuneration. They were accompanied by the naturalist, Mr. George K. Cherrie, and by Mr. Suydam Cutting, a volunteer photographer. The expedition was conducted under the patronage of Mr. James Simpson. According to cable reports, the hunters have met with great success, having secured, among other large mammals, eight specimens of the rare Marco Polo's sheep. Numerous birds, reptiles and small mammals are also mentioned in reports.

A contribution of \$125,000 was received from Mr. Ernest R. Graham, a portion of which, supplemented by an additional \$12,000 from President Stanley Field, was used for the purchase of the Egyptian collections made by Professor James H. Breasted. These collections include 580 textiles, 10 bronzes, 154 pieces of alabaster and one black granite statue, representing the architect Senmut. The hall containing the Egyptian collection has been named Ernest R. Graham Hall.

Other contributions made by President Field were: \$8,000 toward the deficit in the operating budget for 1925; \$51,629.50 as a further gift toward the building fund deficit; the purchase of the skins of the Man-Eaters of Tsavo, now on display, mounted; and, together with Messrs. Henry J. Patten and Charles B. Pike, the gift of the Gunther ethnological and ethnographical collection. President Field also contributed \$14,300 toward the Stanley Field Plant Reproduction Fund, of which he is the exclusive patron.

The Captain Marshall Field annuity of \$100,000 continues to enable the Museum to extend its expeditionary program and to widen the scope of its publications. Most of the expeditions sent out by the Museum during the year were partly or wholly indebted to this fund. A new series of publications, the Technique Series, dealing with museum practice, both administrative and scientific, was inaugurated, two numbers being issued.

Late in the year, Captain Marshall Field announced his intention to present to the Museum a series of twenty-six sculptures of prize British domestic animals for exhibition in the Department of Zoology. These sculptures are the work of the well-known English sculptor, Herbert Haseltine.

Mr. Richard T. Crane, Jr., gave \$30,000 to the Museum for the purchase of an admirable set of three life-size groups, cast in bronze, portraying native Africans engaging in lion spearing. These bronzes are the work of the noted sculptor and taxidermist, Carl E. Akeley.

"The Chronicles of America," a series of thirty-four motion picture films, totalling one hundred reels, devoted to American history issued by the Yale University Press, was the gift of Mr. Chauncey Keep in memory of his son, Henry Blair Keep, who lost his life in the World War. These films have already been shown in a children's series and in a series of entertainments for foreign born citizens.

The generous contributions of Mr. Edward E. Ayer to the ornithological library and the pewter collection which bear his name and to the general zoological library, were continued throughout the year, many rare and valuable additions being made.

A collection of 160 rhinoceros-horn libation cups was presented by Mr. John J. Mitchell through the instrumentality of Mr. Ayer. These cups are of particular interest because of the former belief that cups made of this material neutralized poison and rendered the drinker safe from assassination in that manner.

Mr. William J. Chalmers continued his annuity for the upkeep and growth of the William J. Chalmers Crystal Collection.

A collection containing 38,731 eggs has been deposited with the Museum by Judge R. Magoon Barnes, Assistant Curator of Oology. Judge Barnes will continue to share responsibility with the Museum for the growth and care of this collection during his lifetime, after which it will pass into the sole ownership of the Museum.

The first use of the fund provided by Mr. Julius Rosenwald and Mrs. Augusta N. Rosenwald was to defray the expenses of an ethnological expedition among the Sauk, Fox, Winnebago and Potawatomi Indians. Mr. M. G. Chandler who undertook this expedition, secured many valuable specimens, reference to which is made elsewhere.

The membership campaign has continued to be effective; a considerable portion of the greatly increased membership being attributable to the growth in the Museum's activities.

The additions to the staff during the year included the appointment of Dr. A. L. Kroeber as Research Associate in American Archeology,

the appointment of Mr. Sharat K. Roy as Assistant Curator in Invertebrate Paleontology and the employment of a third guide-lecturer. The resignations of Miss Helen C. Gunsaulus, Assistant Curator of Japanese Ethnology, and Mr. Charles L. Owen, Assistant Curator of Archeology, are announced.

In appreciation of their valuable services to science: Mr. Chauncey Keep, Mr. Richard T. Crane, Jr., Mr. Julius Rosenwald and Mrs. Augusta N. Rosenwald were elected Honorary Members of the Museum; Mr. Silas H. Strawn, Mr. Theodore Roosevelt, Mr. Kermit Roosevelt and Mr. Frederick C. Hack were elected Patrons of the Museum.

Maintenance and improvement in the Museum building received their proper attention during the year. Among the improvements may be mentioned the construction of improved cases for the storage of specimens in various departments and the covering of the skylights in the Department of Botany Library and in the Edward E. Ayer Library. Thirty-four new exhibition cases were built and installed. New bookshelves and other library furniture were installed in the Department of Anthropology Library. Twenty-four large curtain walls were built and installed in the zoological exhibition halls. Iron railing was built around a number of exhibits, 420 feet of railing being installed.

Grateful acknowledgement is made to the Clyde W. Riley Advertising System for the use during the year of a page in the programs of the theatres of Chicago, and to the transportation companies for the exhibition of posters.

LECTURES AND ENTERTAINMENTS

GENERAL LECTURES.—The Forty-third and Forty-fourth Free Lecture Courses of Field Museum of Natural History were given in the James Simpson Theatre on Saturday afternoons during the Spring and Autumn months. Occasion is here taken to thank the scientists and explorers who participated in these courses. They were welcomed by appreciative audiences. Following are the programs for both courses:

February 28—"Birds of Field, Forest and Garden."

Dr. G. Clyde Fisher, American Museum of Natural History, New York.

March 7—"Mexico."

Mr. Frederick Monsen, Pasadena, California.

March 14—"Over the Higher Yosemite Trails."

Mr. Ford Ashman Carpenter, Los Angeles, California.

- March 21—"Seal Hunting off the Coast of Newfoundland and Labrador."
Captain Robert A. Bartlett, Washington, D. C.
- March 28—"Music of Primitive People."
Mr. Henry Purnmort Eames, Chicago.
- April 4—"Great Mountains and Strange Corners of the Orient."
Mr. Richard Halliburton, Memphis, Tennessee.
- April 11—"Java and its People" (Arthur B. Jones Expedition, 1923).
Dr. Fay-Cooper Cole, Leader of the Expedition.
- April 18—"Bird Manor—(Home Life of Wild Birds)."
Mr. T. Walter Weiseman, Pittsburgh, Pennsylvania.
- April 25—"Trail Riders of the Rockies."
Colonel Philip Moore, Department of Public Instruction, Washington, D. C.
- October 3—"Hunting the Extinct Animals of Patagonia."
Mr. Elmer S. Riggs, Associate Curator of Paleontology, Field Museum of Natural History.
- October 10—"The Australian Bush."
Captain Kilroy Harris, Cleveland, Ohio.
- October 17—"Wild Animals in Captivity."
Mr. George F. Morse, Jr., Chicago.
- October 24—"The Maya, the Greeks of the New World."
Dr. Sylvanus G. Morely, Carnegie Institution, Washington, D. C.
- October 31—"Old Indian Trails."
Mr. Walter McClintock, Pittsburgh, Pennsylvania.
- November 7—"Life and Industries of Native Tribes of Central West Africa."
Dr. Amandus Johnson, Philadelphia, Pennsylvania.
- November 14—"Educational Work in the National Parks—Present Development and Possibility for the Future."
Hon. Stephen T. Mather, Director of National Parks, Washington, D. C.
- November 21—"Mesopotamia."
Dr. Edward Chiera, in Charge of the American School of Oriental Research in Baghdad.
- November 28—"Lapland."
Dr. G. Clyde Fisher, American Museum of Natural History, New York City.

In addition to the announced courses, the following special lectures were delivered during the year:

- February 14—"Hunting and Collecting in Many Lands."
Mr. Kermit Roosevelt.
- February 15—"The River of Doubt."
Mr. Kermit Roosevelt.
- March 1—"My Winter in North Greenland."
Captain Donald B. MacMillan.
- December 5—"In Search of the Unknown."
Captain Donald B. MacMillan.
- December 6—"In Search of the Unknown."
Captain Donald B. MacMillan.
- December 19—"Indian Life in Song and Story."
Mr. A. T. Freeman (Gai-i-wah-go-wah).
- December 20—"From the Sargasso Sea to the Galapagos."
Mr. William Beebe.

AMERICANIZATION PROGRAMS.—In July, 1925, Mr. Chauncey Keep presented the Museum with the Yale University Press Chronicles of American Photoplays as a memorial to his son, Henry Blair Keep, who lost his life in the World War. The completed series will bring the Museum thirty-four historical motion pictures totaling one hundred reels. At present, fifteen subjects have been made and are lodged in the Museum's vaults. The others will follow as soon as they are released by the Yale University Press. The ownership of these films made it possible for the Museum, with the cooperation of the Citizenship Committee of the Chicago Council of Social Agencies, to join definitely in Chicago's Americanization work; and it did so by arranging two series of American history motion pictures which were shown in the James Simpson Theatre on Sunday afternoons throughout the Autumn. Following is the program for the first course:

- September 20—"Columbus."
"Jamestown."
- September 27—"The Pilgrims."
"The Puritans."
- October 4—"Peter Stuyvesant."
"The Gateway to the West."
"Wolfe and Montcalm."
- October 11—"The Eve of the Revolution."
"The Declaration of Independence."

- October 18—"Vincennes."
"Daniel Boone."
"The Frontier Woman."
October 25—"Yorktown."
"Alexander Hamilton."

The second Sunday afternoon course (November 1 to December 13, omitting December 6) repeated this program. The Americanization courses proved most popular, capacity audiences attending them.

ENTERTAINMENTS FOR CHILDREN.—Two series of entertainments for children were given in the James Simpson Theatre. The Spring course was composed of a series of motion pictures on natural history, travel and industries, with one lecture and one introductory talk as special events. The Autumn course combined the Chronicles of America Photoplays (see Americanization Programs) with natural history subjects in a series of fourteen programs. In connection with both courses, Museum Stories for Children were prepared by the guide-lecturers and distributed at each entertainment. Twenty-three stories in editions of from 2000 to 3000 each were so distributed and many additional copies were used as reference material in the schools. Capacity audiences attended the entertainments, the programs for which follow:

- February 28—10:30 a.m. A lecture: "Wild Animals Near Home."
Dr. G. Clyde Fisher, American Museum of Natural History, New York City.
9:30 and 11:30 a.m. Moving Pictures: "The Four Seasons."
March 7—"The Story of Beginnings."
March 14—"Beyond the Snow Line."
Introductory talk by Dr. A. S. Johnson.
†"Elephant Seals."
March 21—"Animal Athletes."
"Feathered Fishermen."
"Mysteries of Prehistoric Indians in Yucatan."
"A Goldfish Story."
"The Kindly Fruits of Earth."
March 28—"The Hare and the Tortoise."
"Friends of Man."
"Steel: From Iron Ore to Rails."

*Grateful acknowledgment is made to Doctor A. S. Johnson for the loan of motion pictures marked with an asterisk and to Mrs. Keith Spalding for the gift of motion pictures marked with a dagger.

- “Johanna, an Untrained Chimpanzee.”
“Pirates of the Air.”
- April 4—“The Story of Bedouin Life in the Desert.”
- April 11—“From Caves to Skyscrapers.”
“The Lion and the Fly.”
“Peculiar Pets.”
“The Science of a Soap-bubble.”
- April 18—“Bobbie’s Ark.”
“Experiments with Sulphur.”
“The Silver Salmon.”
“Spirit Wrestlers.”
“Bears.”
- April 25—“Little People of the Garden.”
“Little People of the Sea.”
“The Last Stand of the Red Man.”
“The Grasshopper and the Ant.”
- September 19—“Columbus.”
“In the Land of the Incas.”
- September 26—“Jamestown.”
“Skyland.”
- October 3—“The Pilgrims.”
“Out of the Sea.”
“Animal Vegetarians.”
- October 10—“The Puritans.”
“Gems.”
“Water Babies.”
- October 17—“Peter Stuyvesant.”
“Trout.”
“Willing Captives.”
- October 24—“The Gateway to the West.”
“Time.”
“Sea Lions.”
- October 31—“Wolfe and Montcalm.”
“The Unselfish Shell.”
“America’s Granary.”
- November 7—“The Eve of the Revolution.”
“The Apache Trail.”
“Six-legged Friends.”



GRANITE STATUE OF THE ARCHITECT SENMUT.

EGYPT, ABOUT 1200 B. C.

One-third natural size.

PRESENTED BY MR. ERNEST R. GRAHAM.

- November 14—"The Declaration of Independence."
 "Birds and Flowers."
 "Handling Animals in the Zoo,"
- November 21—"Vincennes."
 "The Petrified Forest."
 "Furs and Feathers."
- November 28—"Daniel Boone."
 "The Butterfly."
 "A Glimpse into the Animal Kingdom."
- December 5—"The Frontier Woman."
 "Alligators."
 "Birds of Crags and Marshes."
- December 12—"Yorktown."
 "Feathers."
 "Hoofs and Horns."
- December 19—"Alexander Hamilton."
 "Seminole Indians."
 "Beetle Studies."

RADIO TALKS.—At various times, through the cooperation of the Chicago Daily News Station WMAQ talks by members of the Museum staff were broadcast by radio. The majority of the programs given over WMAQ were "Radio Photologues," accompanied by rotogravure illustrations in the Saturday editions of the Chicago Daily News. Two programs were given through Sears-Roebuck & Company, Station WLS. Following is the list for the year:

- January 28—WLS, "The Sacrifice of a Captive Maiden by the Pawnee Indians."
 Mrs. Dorothy Cockrell.
- February 7—WMAQ, "The Harris Extension of Field Museum of Natural History."
 Mr. S. C. Simms.
- June 20—WMAQ, "Brazil."
 Dr. O. C. Farrington.
- June 25—WMAQ, "Hunting Prehistoric Animals."
 Mr. E. S. Riggs.
- July 11—"Head Hunters of the Philippines."
 Mr. S. C. Simms.
- July 18—WMAQ, "Fur Seals of Alaska."
 Dr. W. H. Osgood.

- July 25—WMAQ, "Ontario Gold."
Dr. H. W. Nichols.
- August 1—WMAQ, "The Lower Texas Border."
Mr. A. C. Weed.

(This talk was repeated over KWWO, the Brownsville, Texas, Chamber of Commerce Station, about October 31.)

- August 8—WMAQ, "The Roof of South America."
Mr. C. C. Sanborn.
- August 15—WMAQ, "The Andes of Peru."
Mr. J. F. Macbride.
- August 22—WMAQ, "The Thousand Islands off Florida."
Dr. B. E. Dahlgren.
- August 29—WMAQ, "Kish."
Professor E. A. Henry.
- September 5—WMAQ, "Polynesia."
Dr. Ralph Linton.
- September 30—WLS, "Field Museum."
Mr. H. E. Wheeler.
- October 30—WMAQ, "Hunting Extinct Animals of Patagonia."
Mr. E. S. Riggs.

PUBLICATIONS

Two new series of publications were inaugurated during the year, the Technique Series and Anthropology, Memoirs. In the Technique Series it is planned to embrace the subject of museology, dealing with museum methods and practices, both administrative and scientific. Two numbers in this series were published during the year. In Memoirs is being published the results of anthropological expeditions of especial merit and permanent value. One number has been published in this series.

In the regular publication series, eleven publications have been issued, seven of them being of the Zoological Series. In the Design Series two publications were issued. Six numbers were added to the general leaflet series.

Following is a list of the publications and leaflets issued during the year:

- Pub. 224—Zoological Series, Vol. XIV, No. 3. The Brains of the South American Marsupials *Caenolestes* and *Orolestes*. By Jeanette Brown Obenchain. January, 1925. 39 pages. 4 halftones, 9 zinc etchings.

- Pub. 225—Botanical Series, Vol. IV, No. 3. The Taxonomy of Poison Ivy, with a note on the Origin of the Generic Name. By James B. McNair. March, 1925. 23 pages, 11 zinc etchings.
- Pub. 226—Zoological Series, Vol. XV, Part II. The Marine Fishes of Panama. By S. E. Meek and S. F. Hildebrand. April, 1925. 385 pages. 46 halftones.
- Pub. 227—Report Series, Vol. VI, No. 4. Annual Report of the Director for the year 1924. January, 1925. 119 pages. 16 photogravures.
- Pub. 228—Zoological Series, Vol. XII, No. 8. Two New Birds from Peru. By John T. Zimmer. May, 1925. 12 pages.
- Pub. 229—Zoological Series, Vol. XII, No. 9. The Long-clawed South American Rodents of the Genus *Notiomys*. By W. H. Osgood. October, 1925. 16 pages. 1 halftone.
- Pub. 230—Zoological Series, Vol. XII, No. 10. New Coral Snakes from Peru. By Karl P. Schmidt and F. J. W. Schmidt. October, 1925. 8 pages. 3 halftones.
- Pub. 231—Botanical Series, Vol. IV, No. 4. South American Plants. By J. Francis Macbride. June, 1925. 20 pages.
- Pub. 232—Geological Series, Vol. IV, No. 4. On the Head of the Macropetalichthyids. By Erik Aron Stensiö. October, 1925. 114 pages. 10 halftones, 13 photogravures, 10 zincs, 7 colored plates.
- Pub. 233—Zoological Series, Vol. XII, No. 11. A Review of the Fishes of the Genus *Signalosa*. By Alfred C. Weed. October, 1925. 12 pages.
- Pub. 234—Zoological Series, Vol. XIII, Part. 4. Catalog of Birds of the Americas. Initiated by Charles B. Cory. Continued by Charles E. Hellmayr. December 29, 1925. 390 pages, 1 colored plate.

ANTHROPOLOGY, MEMOIRS

- Vol. I, No. 1. Report on the Excavation of the "A" Cemetery at Kish, Mesopotamia. Part I. By Ernest Mackay with preface by Stephen Langdon. 1925. 64 pages, quarto size, 20 plates.

DESIGN SERIES

- Anthropology, Design Series No. 3. Chinese Baskets. By Berthold Laufer. 38 photogravures and preface of two pages, in carton. Edition 1500.

- Anthropology, Design Series No. 4. Decorative Art of New Guinea.
By Albert Buell Lewis. 1 photogravure, preface of two pages and
52 plates. Edition 3000.

LEAFLETS

- Anthropology, No. 21. Ivory in China. By Berthold Laufer. 10
photogravures. 78 pages. Edition 1619.
Anthropology. Index to Tobacco Leaflets. By B. Laufer, A. B. Lewis,
R. Linton and J. A. Mason. 8 pages. Edition 546.
Anthropology. Index to Japanese Leaflets. By Helen C. Gunsaulus.
7 pages. Edition 543.
Botany, No. 11. Common Trees. By J. Francis Macbride. 2 photo-
gravures. 43 halftones. 44 pages. Edition 6010.
Geology, No. 5. Soils. By Henry W. Nichols. 6 photogravures. 13
pages. Edition 3060.
Geology, No. 6. The Moon. By Oliver C. Farrington. 2 photogravures.
13 pages. Edition 3055.
Geology, No. 7. Early Geological History of Chicago. By Henry W.
Nichols. 4 photogravures. 6 maps in color. 6 halftones. 30 pages.
Edition 3048.
Zoology, No. 7. The Man-Eating Lions of Tsavo. By Lieutenant-
Colonel J. H. Patterson, D.S.O. 6 halftones. One map. 40 pages.
Edition 6000.

TECHNIQUE SERIES

- No. 1. Herbarium Organization. By Charles F. Millsbaugh. 18 pages.
Edition 1100.
No. 2. New Uses of Celluloid and Similar Material in Taxidermy. By
Leon L. Walters. 7 plates. 20 pages. Edition 1100.

LIBRARY

The total number of books and pamphlets in all departments of the Library at the close of the year was approximately eighty-seven thousand. The total number of accessions for the year was two thousand, four hundred and forty-one.

The additions to the Library have been largely through gifts and exchanges. Purchases of books were influenced by the needs of the work in hand in the various departments. The exchanges of the year have been gratifying. A number of foreign institutions have sent their publications to assist in filling in or completing their files or have sent





MAN-EATING LIONS OF TSAVO.

PRESENTED BY PRESIDENT STANLEY FIELD.

Transferred by Mr. Julius Vossler and Mr. H. C. Houder.

special publications that were issued during or since the war. Individual contributors both at home and abroad have continued to show their interest by sending contributions.

The number of Publications and Leaflets distributed by the Museum during the year has had a stimulating effect on the exchange list. Publications have been received from seven hundred and eight individuals and institutions.

The search for ornithological literature has been continued until it has narrowed down to rare desiderata. The result of this year's search has been very satisfactory as it has brought many valuable and rare works to enrich the Edward E. Ayer Ornithological Library. In all Mr. Ayer has presented this year six hundred and thirty-eight volumes. Among the notable works received are:

Alpina, 4 volumes, 1806-1809.

Neue alpina, 2 volumes, 1821-1827.

Ardea, volume 1, 1912.

Audubon, The birds of America, 2nd edition, 7 volumes, 1860.

Bailey, H. H., The birds of Florida, 1925.

Duperrey, L. I., Voyage autour du monde. . . sur la corvette, la Coquille., 2 volumes in 4, 1826-1830.

Eschschaltz, Zoologischer atlas, 1829-1833.

Forbush, E. H., Birds of Massachusetts and other New England states, 1925.

Gosse, P. H., Illustrations of the birds of Jamaica, 1849.

Grandidier, A., Histoire naturelle des oiseaux, Madagascar, 4 volumes, 1878-1881.

Krause, G., Oologia universalis palaearctic, 78 plates, 1905-1915.

Kuroda, N., A contribution to the knowledge of the avifauna of the Riu-Kiu islands, 1925.

Lavauden, L., Voyage de M. Babault en Tunisie. Oiseaux, 1924.

Lee, O. A. J., Among British birds and their nesting haunts, 4 volumes, 1897.

Macgillivray, W., A history of British birds, 5 volumes, 1837-1852.

Milne-Edwards, A., Recherches sur les oiseaux de la France, 2 volumes, 1867-1872.

Naumann, J. F. and Buhle, C. A., Die eier der vögel Deutschlands, 1818.

- Nilsson, S., *Ornithologia suecica*, 2 volumes, 1817, 1821.
- Olphe-Gaillard, L., *Contribution à la faune ornithologique de l'Europe*, 1884-1892.
- Osbeck, P., *Reise nach Ostindien und China*, 1765.
- Pelt-Lechner, A. A. van, "*Oologia neerlandica*," 2 volumes, 1910-1913.
- Pennant, T., *Arctic zoology*, 2 volumes, 1784-1785.
- Richardson, J. and Gray, J. E., *The zoology of the voyage of H. M. S. Erebus*, 2 volumes, 1845-1875.
- Rochebrune, A. T. de, *Faune de la Senegambie. Oiseaux*, 1883-1884.
- Ross, A. M., *Birds of Canada*, 1872.
- Sundevall, C. J., *Svenska foglarna*, 4 volumes in 3, 1856-1886.
- Temminck, C. J., *Catalogue systématique du cabinet d'ornithologie et de la collection de quadrumanes*, 1807.
- Wright, M. V., *Funlands foglar*, 2 volumes, 1859, 1873.
- Zichy, E., *Dritte asiatische forschungsreise. Zoologische ergebnisse*, 1901.

Mr. Ayer also purchased for the zoological library the following works;

- Audubon and Bachman, *Viviparous quadrupeds of North America*, original edition, 5 volumes, 1845.
- Azara, *Quadrupeds of Paraguay*, 1838.
- Buffon, *Oeuvres complètes*, 34 volumes, 1827-1828.
- Buffon, *Oeuvres complètes*, Daubenton, 40 volumes, 1824-1830.
- Chinese fishes, illustrations.
- Couch, *History of the fishes of the British Islands*, first edition, 4 volumes, 1862-1865.
- Gould, *Kangaroos*.
- Gould, *Mammals of Australia*, 3 volumes, 1863.
- Maxwell, *Stalking big game with camera in equatorial Africa*, de luxe edition, 1924.
- Millais, *Breath from the veldt*.
- Museum National d'Histoire, *Naturelle Annales*, 20 volumes, 1803-1813.
- Museum National d'Histoire, *Naturelle Mémoires*, 20 volumes, 1815-1830.
- Naturaliste*, 32 volumes, 1877-1910.

Scopoli, J. A., *Annus I-V historico-naturalis*, 5 plates in 1, 1769-1772.

Thorburn, *British mammals*, 2 volumes, 1920-1921.

The catalogue of the Edward E. Ayer Ornithological Library that has been in preparation for a couple of years is nearly ready for the press. Originally this was planned to be simply a check list, though a comprehensive and useful one, but as the work progressed it has become instead a bibliography that contains information and facts that will make it for all time an indispensable manual to every student of ornithology.

The activities of the Library during the year were largely confined to the usual routine work necessary to keep available the material in the Library and the current accessions as they were received. There were written and inserted in the various catalogues ten thousand two hundred and eighty-one cards. From the John Crerar Library were received and filed eight thousand seven hundred and fifty-four cards. There were sent to the bindery nine hundred and twenty-four volumes of periodicals, serials and other unbound publications.

Owing to various conditions it had not been feasible hitherto to make an inventory of the books in the departmental libraries since their final reorganization but this past year an inventory was taken of the anthropological, botanical and zoological libraries. This was necessarily a slow process and consumed much time owing to the various changes that had been made. The results were, however, quite satisfactory.

The need of more shelf room in the general library was met by the addition of one stack. A rearrangement of the lighting system made in the stacks has added much to their convenience as well as economy of electricity. A built-in case for the sample backs used in binding was also added.

The completion of the Union list of serials of the libraries of the United States and Canada is anticipated as a valuable bibliographical aid and the Library is sending in its list of periodicals to be incorporated as the parts are issued.

Advantage has been taken of the inter-library loan service for books needed by the staff. This service is of the greatest value to research workers, making available as it does the resources of the libraries of the country under an arrangement whereby rare books may be borrowed and lent with insured safety. Acknowledgment of indebtedness is made to the libraries from which books have been borrowed during the year. The Library has been able to reciprocate with loans to other institutions.

DEPARTMENTAL CATALOGUING, INVENTORYING
AND LABELING

ANTHROPOLOGY.—The work of cataloguing in the Department of Anthropology has been continued as usual during the current year, the number of catalogue cards prepared totaling 4,389. These cards are distributed geographically as follows for the accessions received during the year: South American and Mexican archaeology and ethnology, 2,103; North American archaeology and ethnology, 864; Australia and Africa, 39; Egypt, 3; Melanesia, 27; Micronesia, 7; Polynesia, 157; Europe, 58; China, 165; Japan, 8; Borneo and Java, 115; India and Siam, 3; Ayer pewter collection, 81; total, 3,630. The following cards were prepared this year for accessions received previous to 1925: South American archaeology and ethnology, 5; North American archaeology and ethnology, 83; Africa, 7; Egypt, 4; Polynesia, 5; Europe, 30; Japan, 22; Korea, 1; China, 489; Persia and India, 10; Federated Malay States, 86; Ayer pewter collection, 17; total, 759. The total number of cards prepared was 4,389. Of these cards, 2,389, with the addition of 407 cards for the Arthur B. Jones collection, have been entered in the inventory books of the Department which now number 44, making a total of 2,796 cards entered. The number of annual accessions amounts to 84, 64 of which have been entered. Twenty-three accessions from previous years were also entered. The total number of catalogue cards entered from the opening of the first volume is 166,685.

Several thousand labels for use in exhibition cases were prepared and installed during the year, the number of labels supplied by the printer totaling 5,100. These labels are distributed as follows: Polynesia, 3,272; China, 1,023; Malaysia (Arthur B. Jones collection), 305; Ayer pewter collection, 237; Stanley Field Hall, 129; American Indians, 102; Egypt, 32; total 5,100.

The Department was supplied with 8,490 catalogue cards and 150 maps for the cases in the new Polynesian Hall. One hundred and forty-one label cards were prepared and added to the label-file. Three hundred and one photographs were added to the departmental albums, and one new album for New Zealand was started.

BOTANY.—In the Department of Botany catalogue, 3,173 entries were made during the year, bringing the total number of catalogue volumes to 63 and the catalogued specimens in the department to 553,249. The entries added to the department card index to collectors number 34, and to the index of geographic localities, 11. About 120 cards were added to the catalogue of plant names.

About 4,000 new genus covers were provided, one-half of these for the Illinois Herbarium in connection with its complete reorganization, some hundreds for fungi and the rest for new additions to the main herbarium of flowering plants.

Descriptive labels were written during the year for additions to the exhibits in the Hall of Plant Life and various old labels were revised. For the plant economic exhibits labels were prepared for the cane and beet sugar exhibits, for the miscellaneous collection of sugars and for the revised wood distillation products.

GEOLOGY.—The total number of new catalogue entries for the year was 8,706. The majority of these were of invertebrate fossils of the Borden collection, the cataloguing of which is still in progress. All new accessions received during the year have been catalogued, except the collections of the Captain Marshall Field paleontological expeditions in Argentina and Bolivia of which 434 specimens have been recorded.

Cataloguing of the Borden collection of invertebrate fossils performed during the year has involved examining a total of 9,621 specimens, of which 7,778 have been identified and labeled, and 1,843 of previous entry have been checked and labeled. During this work 25 undescribed species have been discovered and the high quality of the collection confirmed. The specimens received from the South American paleontological expeditions have all been unpacked, grouped according to species and placed in trays.

A complete catalogue of the Department series of lantern slides was prepared and the slides then transferred to the General Files. The total number of slides so catalogued was 1,774. The slides were grouped geographically, labels were provided where they were lacking and any needed repairs on individual slides were made.

The miscellaneous collection of large maps, numbering 110, was classified and catalogued. The maps were then arranged in drawers in such a way as to make them readily available for reference. With 303 of the topographic maps of the United States Geological Survey there were filed brief labels descriptive of the topographic features shown. Eighty-six additional maps of this series were received during the year, making a total of 2,993 U. S. Geological Survey topographic maps now on hand. All are filed alphabetically by sheets and grouped according to the states.

The smaller specimens of meteorites, 611 in number, not suited for exhibition were placed in trays, arranged in alphabetical order and the labeling of each checked.

Sixteen trays were provided for the card catalogue of the Department library and the catalogue, numbering 4,665 cards, was transferred to them. To the Department photograph albums 554 prints were added during the year, making a total of 4,970 prints in these albums. All except the latest of these are fully labeled. The prints added were chiefly of photographs made by the Captain Marshall Field Expeditions to Argentina, Bolivia and Brazil.

A total of 644 labels was written during the year. These included descriptive labels written for the series of blast furnace models, the cement plant model and for some of the exhibits in Stanley Field Hall. The shorter labels were chiefly for newly installed specimens of crystals, gems, fossils and ores. There were received from the printing department 590 labels.

ZOOLOGY.—Regular cataloguing of zoological specimens proceeded at an increased rate. The total number of regular entries was 6,104 as against 3,782 the preceding year. They were distributed as follows: Mammals, 1,477; Birds, 10; Reptiles and Amphibians, 1,535; Fishes, 3,042; Insects, 10. Additional card entries in the index catalogues of mammals and of reptiles numbered 2,906, making the total of all entries for the year 8,985.

In the division of mammals, about one thousand specimens have been labeled, these being largely from the Peruvian collections of 1922-23. All skulls of the Chilean collection have been numbered and, when identified, have also been labeled. Reptiles and amphibians, for the most part, have been identified, labeled, and shelved. Exhibition labels were prepared for all new exhibits and about 300 labels were printed to replace old ones in the systematic exhibit of fishes in order to make the labeling in this exhibit uniform throughout.

Photographic prints in the Department of Zoology, which have received little attention for some years, were subjected to rearrangement and classification. The departmental albums now contain 6,554 prints of which 519 were mounted during 1925 and 1026 were labeled with data as to subject, locality and source.

The state of the catalogues at the end of the year is as follows:

| | Number of Record Books | Total of Entries to Dec. 31 1925 | Entries during 1925 | Total of cards written |
|--------------------------------|---------------------------|---|---------------------------|------------------------------|
| Department of Anthropology.... | 44 | 166,685 | 2,796 | 168,686 |
| Department of Botany..... | 63 | 553,249 | 3,173 | 556,422 |
| Department of Geology..... | 26 | 172,294 | 8,706 | 181,000 |
| Department of Zoology..... | 46 | 116,236 | 6,104 | 122,340 |
| Library..... | 14 | 158,097 | 12,852 | 170,949 |

ACCESSIONS

ANTHROPOLOGY.—The new accessions received during the year by the Department of Anthropology amount to 84, the highest number of accessions ever recorded in any year. Of these 65 are by gift, 3 as the result of Museum expeditions, 9 by exchange and 7 by purchase. These accessions aggregate a total of 8,037 objects, and many are of great value and importance.

Among the treasures brought back from Egypt by Professor Breasted, the granite statue of Senmut, an architect of the fifteenth century B.C., occupies the first rank. The statue, presented by Mr. Ernest R. Graham, is a little under one-third life-size. The famous architect was the guardian of the young princess whom he tenderly carries in his arms. This princess was the daughter of the celebrated Queen Hatshepsut, the first great woman recorded in history. There are three inscriptions on the statue: one of six lines on the front; another, of three lines on the base; and a third, of one line on the plinth behind. According to the six-line inscription on the front of the architect's garment, the statue was presented to him as a token of favor from the Queen herself, and is therefore the work of a royal sculptor. Senmut was the builder of the magnificent temple of Deir-el-Bahri, close by the tomb of Tutankhamen, and erected the obelisks of Queen Hatshepsut. The Queen whom he served was an able politician, and he was one of the leaders of the coterie which she gathered about her. Eventually, however, the whole group fell, including the Queen, and our architect's name was cut out wherever it appeared on the monuments of Egypt. It is interesting to note that his name is also effaced on this statue, though there are several places where it is still unmistakable. This, according to Professor Breasted, goes to show that our statue once stood in a public place, and circumstances warrant the conviction that this place could only be the great Karnak temple. This sculpture, therefore, with its inscriptions, is one of paramount historical interest and importance. The Museum, further, secured through Professor Breasted a bronze sistrum and nine excellent bronze statuettes as follows: torso of Taharka, the standing figure of a king of the Middle Kingdom, a royal standing figure with face damaskened in gold, a seated figure of the goddess Isis, a superb Horus Bird with golden eyes, a standing figure of Nefertem, a standing figure of the Moon-god, a Scorpion goddess, and a sitting figure of Imhotep, the father of architecture in stone masonry, holding an open papyrus roll in his lap. Although the last is only four inches in height, it is a very remarkable portrait statuette of great artistic quality. The granite statue and bronzes, together with a collection of 154 beautiful alabaster

vases and bowls, were presented to the Museum by Mr. Ernest R. Graham. A magnificent collection of 580 ancient Egyptian and Coptic textiles discovered in tombs and likewise selected by Professor Breasted in Egypt was presented by President Stanley Field. Professor P. E. Newberry, the English expert in textiles, regards this as the best collection of ancient textiles outside the South Kensington Museum of London. It consists not only of numerous panels, medallions, and borders with woven and embroidered designs, but also of complete linen garments in a wonderful state of preservation. It includes a rug (35 x 27 inches) with a heavy nap, decorated with geometric designs in red, blue, green and yellow, according to Professor Breasted, the oldest woven rug in existence (about 200 B.C.).

An oil-painting (6 x 8 feet) representing the Rock Temple at Aboo Simbel, Egypt, and painted in 1874 by Andrew McCallum, has been presented by Mr. Thomas S. Hughes, a well-known art-dealer and connoisseur of Chicago. This is a very instructive picture of great archaeological interest. The temple of Aboo Simbel hewn out of the solid rock, with a front 119 feet wide and over a hundred feet high, is one of the marvels of ancient Egyptian architecture, and was built by Ramses II (1292-25 B.C.). The four gigantic statues which adorn the façade, each being 65 feet in height, represent the king himself and are excellent portraits of him. There are also smaller figures representing members of his family, as his mother, wife and two of his daughters. Andrew McCallum was a noted landscapist whose work attracted the favorable notice of Queen Victoria. He was born at Nottingham, England, in 1828, studied in Paris and Italy, became director of the Manchester School of Art, and died in 1902. The gilt frame of the painting is carved with designs of Egyptian style. Mr. Hughes also presented two very interesting wooden statuettes, one from China and one from Burma, which had been obtained by Sir Thomas Marion Wilson on his travels in 1875.

A notable acquisition of great interest is represented by an extensive collection illustrating the culture of a large group of Negro tribes who belong to the western Bantu and inhabit the territory of Cameroon on the west coast of central Africa. This culture area is distinguished by a high development of the industrial arts, particularly in wood and ivory carving, weaving and knitting, beadwork, iron forging and metal casting, and shows the ability of the Negro at its best. In this respect, Cameroon culture displays many affinities with the ancient art of Benin, which is well represented by many good examples in the Museum, and with that of the Sudan. For this reason this new collection connects



SKULL OF FOSSIL WHALE.

PAMPAS OF PATAGONIA.

COLLECTED BY THE CAPTAIN MARSHALL FIELD PALEONTOLOGICAL EXPEDITION TO ARGENTINA, 1828.

Length 5 feet 6 inches.

Prepared by Mr. J. B. Abbott.

well with the Museum's former acquisitions from Africa exhibited in the West Gallery. There is, however, a remarkable difference between this and the older collections: the latter were more or less haphazardly brought together, chiefly by way of exchanges, while the new collection, made with intelligence and good judgment, is very comprehensive and affords an accurate and complete view of a well defined culture area. It consists of about two thousand objects of a great variety, most of them old, all of superior workmanship and in a good state of preservation, well determined according to locality and tribe. Three complete figures of dancers—a warrior with mask, knitted suit, shield and spear, one clad with feather dress and mask, and another with a beaded head-dress in shape of a lizard—are especially noteworthy. There are two well-carved wooden beds; two large old wooden drums with splendid carvings, the property of once powerful chieftains; about a hundred sculptured wooden images, and many excellent carved masks, door-posts, and house-posts. Clothing; weapons like bows, crossbows, poisoned arrows, swords, daggers, axes, spears, clubs, shields and fire-arms; baskets, bags, mats, pottery, knives, implements, tools, harness, fishing appliances, ornaments and musical instruments including fine signal-drums, are fully represented. The most remarkable achievements of this Bantu culture are bracelets carved from elephant's ivory and complete elephant's tusks carved all over and serving as signal-horns; chieftain's seats of wood gorgeously decorated with colored glass beads; picturesquely beaded calabashes of enormous size, for palm-wine; beaded head-dresses and other articles of clothing for ceremonial dances; also huge tobacco-pipes of clay, wood, and bronze. The bronze castings of these tribes rival those of Benin, and their wood-carvings are probably the best made in Africa. Many of the latter are portions of chieftain's houses, as door and window frames. About six hundred good negatives taken in Cameroon over twenty years ago and representing scenery, villages, and types of natives accompany the collection. Combined with the former acquisitions from Africa, it will form the nucleus of a new African Hall to be installed during the coming year in Hall D on the ground floor.

As a further result of the excavations at Kish a very interesting collection of over seven hundred objects was received this year. These include 362 pottery vessels, numerous stone, shell, bone and metal objects, beads, seals, and cups of ostrich-egg shell.

A fine mat from India, woven from ivory threads (6x3 feet), formerly the property of the late Charles B. Cory, Curator of Zoology in the Museum, was acquired through an exchange with his son.

Mr. Edward E. Ayer added seventy-five pieces to his collection of 439 pewters, thus swelling the total to 514 objects. Prominent among these new acquisitions are large Chinese tea-jars and trays of the Ming period (1368-1643) decorated with inlays of figures and ornaments in brass, an octagonal Ming tea-pot, each panel inlaid with a mythological figure in brass and copper, two puzzle wine-pots in shape of peaches made by Shen Chen-chou, a famed pewterer of the Kien-lung period (1736-95), candlesticks, colored figures, censers, boxes, tea-caddies, and an old English porringer with two flanges decorated with palmetto designs. Mrs. Edward E. Ayer presented a decanter with a set of four glasses trimmed with elaborately decorated pewter.

Mrs. Homer J. Tillotson of Los Angeles presented for the Ayer collection a pewter chalice coated with a fine dark patina and unearthed in 1715 on moorland in Chester, England. It was found embedded in old masonry together with church manuscripts, books, and records, which presumably had formed the corner-stone of a chapel.

A very large collection of rhinoceros-horn cups from China was presented by Mr. John J. Mitchell of Chicago. The horn of the rhinoceros was chiefly carved by the Chinese into drinking-cups. It was an ancient belief that the rhinoceros devours with its food all sorts of vegetable poisons and that its horn therefore was capable of neutralizing poison. A cup carved from the horn was accordingly credited with the ability to detect poison, and was regarded as an efficient antidote. The cups in this collection range from the Ming (1368-1643) to the Manchu dynasty, and display a great variety of forms and designs. The natural conditions of the horn are admirably adapted to the artist's intentions. In many of these cups the shape and designs of ancient bronze and jade vessels are skilfully reproduced; others assume the shape of lotus-leaves or lotus-flowers, with admirable carvings in high and undercut reliefs. The collection affords excellent material for a study of Chinese decorative motives, as developed during the last five centuries.

Three ornamented tomb-bricks of the Han period, China, are the gift of Miss Kate S. Buckingham, Chicago.

Two highly ornamented, so-called "Karen" bronze drums were purchased of Dr. Joseph F. Rock, who had obtained them on his expedition in Upper Siam in 1920. This type of kettle-drum presents an interesting archaeological problem, as it is widely distributed over a vast area of southeastern Asia stretching from the Island of Hainan through southern and western China into Upper Burma and Siam, the Malay Peninsula, Java and other islands of the Malay Archipelago. The "Karen" drums made by the Shan of Upper Burma are decorated with figures of frogs,

in the same manner as the two drums of enormous size from southern China obtained by the Captain Marshall Field Expedition to China in 1923. Together with the six bronze drums from Se-chwan Province in Case 6, Hall 24, the Museum now owns ten of these drums.

A remarkable ethnographical collection from the Dayak of eastern Dutch Borneo, comprising 143 objects, was presented by Dr. William O. Krohn of Chicago, who had visited Borneo himself in 1924, with full and interesting data. This collection is the more welcome, as it bears on a group of Dayak tribes not visited by the Arthur B. Jones Expedition and formerly not represented in the Museum. It comprises blow-pipes, swords, spears, good old shields with fine painted designs, costumes, hats, ornaments, wooden masks, mats, baskets, musical instruments, games and toys. A small collection from the Dayak of Dutch Borneo, chiefly consisting of articles of clothing and weapons, is the gift of Mr. and Mrs. C. M. Worthington of Chicago.

Mrs. Dennis O'Keefe presented a dancing costume of dyed Hibiscus bark fibers from Papeete, Tahiti, of beautiful color and workmanship and unlike anything that the Museum previously had; a loin-cloth of tapa from Suva, Fiji, and two pieces of tapa from Pagopago and Apia, Samoa, stamped with interesting designs. Four pieces of Samoan bark-cloth or tapa were donated by Mrs. William Larmer, Chicago. Much valuable ethnographical material from Hawaii and the Marquesas was obtained through exchange with the Bishop Museum of Honolulu. This collection includes stone hammers and adzes, pounders and lamps, samples of tapa and implements used in preparing it, excellent wooden bowls and platters, gourd bottles, whistles and rattles, shell implements, tobacco-pipes, musical instruments, necklaces, Pandanus mats, pillows, and fans, fishing implements and leather work. Among the objects from the Marquesas is a large wooden image which Dr. Linton had obtained while exploring the islands on behalf of the Bishop Museum. This was an ancestral figure to which human sacrifices were made when rain was desired or when cessation of rain was sought. All this material has been utilized in completing the exhibits in the new Polynesian Hall.

Much material was gathered by the Captain Marshall Field Expedition to Peru under the leadership of Dr. A. L. Kroeber: 658 pottery vessels, 334 lots of pottery sherds, 28 figurines or dolls, 135 textiles, 115 implements for spinning and weaving, 70 other implements of wood and cane, 27 objects of copper and 4 of silver, 29 objects of shell or bone, 36 baskets and mats, 35 calabash vessels, 55 desiccated bodies (so-called mummies), mostly of children, 283 skulls and lots of bones, 107 miscellaneous objects including samples of maize and other food-

stuffs, cotton, wool, feathers, whistles, paint and plaster, stone, false cloth faces of "mummies," aggregating a total of 1,971 objects. Many pieces of pottery are distinguished by artistic quality, being decorated with finely painted designs or fashioned in the shape of fruits. Dr. Kroeber spent ten days in the Museum in December, studying his collection and preparing his report which will be published by the Museum in 1926. The collection is already catalogued and numbered, and preparations are being made for having a goodly portion of it installed early in 1926.

Mr. Edward H. Thompson, to whom the Museum owes a fine collection from the Maya, presented two large pearls found by him last summer in the sepulchre of the High Priest at Chichen Itza, Yucatan, Mexico. These are believed to be the only pearls ever discovered in the Maya area.

Mrs. Charles B. Cory presented man's and woman's costumes from the Seminole of Florida obtained by the late Curator Charles B. Cory during his explorations in Florida in 1894, a record of which is preserved in his book "Hunting and Fishing in Florida" (Boston, 1896). As a personal souvenir of Professor Cory and because the Museum possesses little from the Seminole, this gift is much appreciated.

Mr. M. G. Chandler's expedition to the Central Algonkian tribes of the Chicago area, under the Rosenwald fund, resulted in a collection of 320 objects representing clothing, mats, bags, clubs, spoons, mortars, saddles, snowshoes, flutes, pipes, bundles and other ceremonial objects of the Potawatomi, Menominee, Winnebago, Mississippini and Chippewa. The most important specimens collected among the Potawatomi tribe are ceremonial articles, including a Wabano drum, a Medicine Lodge drum and quilled otter for the Medicine Lodge with other medicine bags, and medicine slabs made of wood and bearing designs representing herbs used as drugs. The most attractive articles for exhibition are those decorated with appliqué work. A very fine series of these was obtained, including most of the techniques and designs practised by these people in early days. This work resembles quite closely that of the Miami tribe, the designs being much smaller than those used by other tribes in this locality. These specimens are far superior to any these people now wear at their ceremonies, and evidently have been handed down as heirlooms for several generations. Many were reluctant to part with these treasures, fearing that the designs might be lost for them. Among the Menominee, Mr. Chandler obtained a rare conjurer's outfit consisting of a bag that contains a mounted loon-head which can be so manipulated that it will rise out of

the bag, stare around at the spectators and then disappear. He also secured the medicine which is said to improve the ability of the loon-head to perform in this manner. The quilled otter and buckskin leggings collected by him among the Winnebago, will serve to round out the Museum collection from this tribe.

Mr. Homer E. Sargent of Pasadena, California, added 29 baskets from the Indians of Arizona and California to his former very substantial contributions in Indian baskets, and presented an exceedingly fine Saltillo serape (8 x 4 feet) decorated with geometric designs in red, blue, and black on a white background, likewise a pair of snowshoes from the Chippewa, an axe, a spear-head, and a dagger beaten out of a nugget of native copper by Copper Center Joe, an Indian of the Aishihik tribe in the Yukon Territory of Alaska, and reproducing exactly these copper weapons as made in ancient times.

A buckskin skirt and apron, ornamented with abalone shells and Chinese coins, of a Karok girl was presented by Miss G. Nicholson of Pasadena, California. A gift of ten feather head-dresses of the Hupa, California, was made by Mr. Edward E. Ayer.

Interesting collections of Crow and Cheyenne medicines and medicine bundles were obtained through exchanges with Mr. W. Wildschut of Billings, Montana, and Mr. M. G. Chandler, Chicago. A very important collection from the Hopewell and other mounds of Ohio, amounting to 369 objects, was secured by exchange with the Ohio State Museum, Columbus, Ohio. It includes celts, mica and obsidian objects, copper ornaments, pipes, bone awls, and tools, and rounds out the Hopewell collection of the Museum very efficiently. Several fine bird stones, gorgets, and discoidals were received as the result of an exchange with Mr. H. L. Johnson of Clarksville, Tennessee. Much interesting material was obtained by way of exchange with the Logan Museum of Beloit College, Beloit, Wisconsin, especially many prehistoric copper and chipped flint implements and grooved stone axes from Wisconsin, stone celts from other parts of the United States, many implements from the stone age of Denmark, a fine pottery vase from Chancay, Peru, and another made by the Yuma of California.

A collection of clothing, weapons, and implements from the Copper Eskimo living around Coronation Gulf, Canada, was purchased of Mr. John G. Worth, Philadelphia, and will make an interesting addition to the Eskimo exhibits in which this group was heretofore not represented.

A miscellaneous archaeological and ethnographical collection, consisting of 361 objects from all parts of the world, and formerly the prop-

erty of Mr. C. F. Gunther, a well-known Chicago collector, is the joint presentation of President Stanley Field, Mr. Henry J. Patten, and Mr. Charles B. Pike. The late George Manierre, trustee, presented a collection of 281 objects, among these being interesting tobacco-pipes from North America, Mexico, and Japan, numerous stone implements and pieces of prehistoric pottery from Illinois, the Mississippi Valley and other parts of North America, and baskets from California and obsidian flakes from Mexico.

BOTANY.—Nearly 9,000 specimens, distributed among 57 accessions, were added to the collections of the Department of Botany during 1925. Approximately 2,000 of these were received as gifts, 2,154 in exchange, and over 3,600 by purchase, while 1,215 were secured on Museum expeditions. Although the greater portion of these collections consists of herbarium material there are 627 specimens of economic or exhibit interest, not including in this number a collection of woods which contains 275 pieces.

The larger or more significant gifts of herbarium specimens include a collection of Cycads from Professor C. J. Chamberlain, consisting of 23 species secured in various parts of the world by the donor and grown by him in the conservatory at the University of Chicago. It comprises the species upon which Dr. Chamberlain's well-known research has been based and constitutes a notable addition to the herbarium. A collection of North American plants, mostly from Illinois, by Mr. H. C. Benke is especially representative of the grass and sedge flora of the Fox River Valley and was obtained over a period of years, following the suggestion of Dr. C. F. Millspaugh. Mr. Benke's exhaustive and discriminating field-work has determined more definitely the ranges within the state of many species, not a few of which he has recorded for the first time from localities where they were not known to grow. His gift of 487 specimens during 1925 will therefore be of particular value to students of the local flora; and, as it also contains a quantity of interesting specimens from many other states from Florida and Louisiana to Wisconsin, and from California, it is one of the most welcome accessions of the year. In addition to the carefully mounted material for the Museum herbarium, there were 75 duplicates to be used for exchanges. Mr. Benke also presented the Museum with 32 photographic plates and prints, some of them hand colored, made by him in the city parks purposely for the use of the Department of Botany. Another collection of 300 flowering plants mostly from Arkansas was presented by Mr. H. E. Wheeler. This is an excellent representation of the flora of that state, includes many of the rarer species and augments most desirably

the Museum collection from Arkansas. Twenty-four photographs of species of mints, unrepresented in the herbarium, were given to the Museum by Dr. Carl Epling of the University of California, Southern Branch. A set of 250 sheets of New Zealand ferns were received from Mr. S. W. Weis and added to the Museum's growing fern herbarium. Mrs. Annie Nethercote contributed 300 European and American specimens, collected by her during various sojourns abroad and on trips in the United States, which were found to contain a number of plants representative of interesting localities. Mr. D. C. Peattie contributed a set of 121 selected plants from the dune region of Indiana, on the flora of which the donor is an authority. The Museum's representation of the plants of the region thereby becomes nearly complete.

The more important accessions of economic specimens include a gift from the Corn Products Refining Company of samples of all of their more recently developed products not included in the series of corn products presented by them several years ago. These will be added to the food products shown in the plant economic exhibits.

A large collection of woods, American and foreign, was presented by Mr. R. R. Stone of Chicago. Among the specimens are many highly desirable additions to the reference and exhibit collections.

Two fine sections of Quebracho wood from Argentina were received as a gift from the Tannin Extract Company of Brooklyn.

Other gifts during the year were: 1 specimen of tobacco captured by Confederate General Gillon near Russellville, Tenn., from Mr. J. A. Andrews, Chicago; 1 herbarium specimen of the Fox Grape, Indiana, from the Honorable J. R. Churchill, Boston, Mass.; 2 specimens of palms, Florida, from Dr. B. E. Dahlgren, Chicago; 6 specimens of wood distillation products from Florida Wood Products Company, Jacksonville, Florida; 2 herbarium specimens of mosses, Washington, from Mr. Julius Friesser, Chicago; 1 specimen showing the destructive work of ants on wood from Mr. J. P. Hallberg, Winegar, Wisconsin; 1 lichen, Arctic Region, from Mr. Alfred S. Johnson, Chicago; 4 herbarium specimens, Illinois, from Mr. J. F. Macbride, Chicago; 1 herbarium specimen of *Coronilla varia* L., Michigan, from Mr. James McCurragh, Portage Point, Onkawna, Mich.; 1 herbarium specimen of *Amyris elemifera* L., the timber tree called "Melón," Central America, from Dr. S. A. Padilla, Salvador, Central America; 1 grass specimen, Illinois, from Mr. James H. Palmer, Chicago; 1 specimen of the rare *Zaccagnia*, Argentina, from Dr. J. N. Rose, Washington, D. C.; 4 herbarium specimens of *Bidens*, Costa Rica and Brazil, from Dr. E. E.

Sherff, Chicago; 1 fungus specimen, Minnesota, from Dr. M. S. Whetstone, Minneapolis, Minn.

The accessions accredited to expeditions are as follows:

As a result of the collecting by A. C. Persaud in British Guiana, provided for under the Captain Marshall Field Expedition Fund, there were received early in the year specimens of woods from the upper Demerara River country accompanied by 51 herbarium specimens pertaining thereto, together with duplicate sets of these for distribution.

The collections made by Dr. A. Weberbauer during six weeks early in 1925, also under the Captain Marshall Field Fund, totaled 254 collection numbers comprising over 1,000 specimens. Many of these are now being determined by specialists in certain plant groups and preliminary reports indicate that this material is a most important addition to the Museum's rich Peruvian herbarium.

Although not included in the accessions for 1925 (the material not having been received) mention may be made here of the botanical work during this year in Peru and Chile of Dr. F. W. Pennell of The Academy of Natural Sciences of Philadelphia to which the Museum contributed from the Captain Marshall Field Fund. Dr. Pennell was unusually successful, securing 2,620 numbers or about 10,000 specimens.

Of the great amount of desirable material received in exchange from other institutions special mention can be made only of the larger collections; for example, 181 sheets from Pomona College, Claremont, California, sent through Dr. P. A. Munz; 90 specimens from the University of California, Southern Branch, through the courtesy of Dr. Carl Epling; 1089 specimens from the U. S. National Museum, communicated by Dr. W. R. Maxon and his associates; 142 specimens from the United States Department of Agriculture; 500 specimens from the Hungarian National Museum of Budapest and 151 from Professor Arthur de Jacewski. All of these sets contain plants not before represented in the herbarium. One herbarium specimen from Peru was also received in exchange from the Missouri Botanical Garden.

Most of the purchased collections were of interest either as coming from parts of the world imperfectly known botanically or from regions inadequately represented in the herbarium. Among the former may be mentioned two lots by Mr. José Steinbach from Bolivia; 90 from Salvador, collected by Professor Salvador Calderón, and containing many interesting types of the flora of Central America; 300 Chilean plants from Dr. E. Werdermann of Santiago, mostly representative of the coastal flora of that country and of exceptional interest to American botanists because of the points of similarity between the vegetation of

Chile and the western United States; Mr. W. E. Broadway furnished a collection of 638 items from Trinidad, of which 43 were wood specimens and 112 fruits and seeds. Among the latter were a series of 350 Arizona specimens bought from Professor H. C. Hanson of the University of Nebraska; a set of 226 collected in Sweden and Norway and another of 203 in Mexico, both purchased from Mr. G. L. Fischer of Houston, Texas; and a collection of 231 sheets of New England plants obtained from Mr. C. H. Knowlton of Hingham, Massachusetts. A purchase of economic material consisted of an admirable lot of seeds illustrating 500 weed seeds, each contained in a glass vial and carefully labeled. It was secured from the collector, Mr. R. H. Greer of Western Springs, Ill.

The remaining purchases were of cryptogamic plants: American lichens from Dr. G. K. Merrill of Rockland, Maine; Jaap Fungi Exsiccati from South America bought from Mr. T. O. Weigel, Leipzig, in continuation of the subscription by Dr. E. T. Harper whose great collection of fungi was given to the Museum. Particularly valuable is a series of 142 algae from Barbados, secured from Miss Mary H. Shaw, 41 Mercers Road, Tufnell Park, London.

GEOLOGY.—Through the continued interest and generosity of Mr. William J. Chalmers, 109 specimens of rare, crystallized minerals, all of occurrences or species entirely new to the collection, were received by gift. These specimens included gem minerals from Brazil, among which were blue, red and green tourmalines, euclase and topaz; a full series of the rare radium minerals curite, soddite, slodowskite etc., from Africa; the largest known crystal of monazite; specimens of the rare species ferrierite and foshagite and a number of unusual occurrences from European localities. Three cut diamonds of different colors, each weighing about .3 carats, from the mines of the Ozark Diamond Mining Co., Murfreesboro, Arkansas, were presented by Mr. Howard A. Millar. From the same donor and Mr. Austin Q. Millar, there were received 21 specimens of the rocks and minerals associated with the diamonds of that locality. Mr. H. E. Wheeler gave a series of sixty specimens of the minerals of Magnet Cove, Arkansas. A large variety of crystals of brookite, rutile and schorlomite was included in this collection as well as a number of the unique minerals and rocks of this locality.

An excellent specimen of one of the trees which grew in the Carboniferous period and formed coal beds was received by gift from Mr. Walter G. Zoller. The specimen shows a complete section across the

trunk of a Carboniferous tree 28 inches in diameter and with spreading roots at the base. It was obtained from the Zeigler No. 1 coal mine at Zeigler, Illinois, and was collected with such care that many of the surface details are preserved. A cast showing a nest of fossil dinosaur eggs from Mongolia was presented by the American Museum of Natural History. Casts of skulls of the reptile, *Protoceratops*, and of the large carnivorous mammal, *Andrewsarchus*, from Mongolia, and of the skull and limbs of the early horse, *Pliohippus*, from a United States locality were donated by the same institution. A number of specimens of fossil corals, most of them polished, were received. Of these, fifteen specimens from Michigan were presented by Mrs. Mary S. Perry and eleven specimens from Iowa by Mr. John Davis. Two polished slabs of Ozora marble of the size adopted as standard for the Museum collection were presented by the Ozora Marble Quarries Co. The Sall Mountain Co. gave eleven specimens of the various asbestos products which they manufacture from the crude material, specimens of which had previously been received. The Illinois Clay Products Co. gave six specimens of their products and related materials. The Banner Rock Products Co. gave five specimens illustrating a rock wool and some of the fabrics made from it, which they manufacture. This "wool" is unique in being made from limestone. Another economic specimen of interest received by gift was a large mass of the historic gold-bearing black quartz of Calaveras County, California. This was presented by Mr. John G. Elliott. Mr. Julius W. Butler presented 38 specimens of ores and minerals including a fine specimen of chalcedony, from previously unrepresented localities in Montana and Idaho. Two interesting additions to the collection of concretions received by gift were four hematite concretions from North Carolina presented by Mr. Charles B. Cory and ten specimens of the typical claystones of the Connecticut Valley given by Mr. Felix E. Mittau. A specimen of a new individual of the Bingara, Australia, meteorite was presented by Prof. George W. Card of Sydney, Australia. All remaining specimens which had not previously been received of the collections of the Captain Marshall Field Paleontological Expedition to Argentina and Bolivia arrived during the year. The consignment totaled 43 boxes, containing chiefly collections made in Bolivia.

Specimens of several meteorite falls new to the Museum collections were added by exchange. These included three individuals of the Johnstown, Colorado, fall obtained from the Colorado Museum of Natural History; from Harvard University a full-sized section of the New Baltimore, Pennsylvania, meteorite and from individuals, repre-

sentative specimens of the Tucson-Carlton, Arizona, and Olivenza, Spain, meteorites. Specimens of several Brazilian minerals, including the very rare species tripubyite, were obtained by exchange with Dr. Jorge Ferraz of Rio de Janeiro. Some specimens of cut gem stones not hitherto represented in the gem collection were procured by purchase. These included 5 cut blue zircons, 2 Australian opals, 6 variously colored "tiger-eyes" and 7 unakites. Ten of the Gilmore restorations of extinct dinosaurs and other reptiles were purchased. These restorations, on a scale from 1/30 to 1/6 of the natural size of the animals, give presumably accurate representation of the living aspect of these strange creatures. A partially complete skeleton, including a fine skull and jaws, nearly complete limbs and some other bones of the extinct American horse, *Equus scotti*, from Texas, was also purchased.

ZOOLOGY.—Zoological specimens were accessioned to the number of 11,479. They are divided as follows: Mammals, 613; birds, 1,238; birds' eggs, 5; reptiles and amphibians, 1,710; fishes, 1,586; insects, 4,377; shells and other invertebrates, 1,952. Large collections obtained by several expeditions in 1925, notably the African and Asiatic expeditions, have not yet been received. Of the total accessions, therefore, only 1,361, are to be credited to museum expeditions.

An important gift of mammals for the year was the pair of famous man-eating lions, which were purchased and presented by President Stanley Field. Other gifts included 40 small mammals from Alaska, presented through Mr. H. B. Conover and comprising a number of species new to the Museum. Mammals purchased were mainly from South America, 124 from Chile, 89 from Brazil, and 17 from Bolivia. Among them was a well prepared skin and skeleton of the Giant Armadillo, an animal of striking character, so much larger than other modern armadillos as to suggest some of their extinct relatives. From expeditions, 196 mammals were received from Central Africa, 5 from Asia, and 17 from British Columbia.

In the division of birds, 940 specimens were purchased, 224 were received from expeditions, 63 by gift, and 11 by exchange. Of those purchased, over six hundred were from eastern Brazil, in the states of Maranhao, Ceara, and Piahy in what is ornithologically perhaps the least known part of South America. Besides specimens from South America, birds were received also from the United States, Canada, Honduras, Formosa, Japan, India, Congo, and Austria.

Of the 1,710 reptiles and amphibians received, 939, or more than half, were obtained through exchange. From the American Museum of

Natural History 691 specimens were added to the collections in partial exchange for the preparation of scientific reports on the reptiles and amphibians of the Third Asiatic Expedition. Other exchanges of reptiles were conducted with the University of Oklahoma, the Museum of Comparative Zoology, the Zoological Society of San Diego, the New York State Museum, and Mr. L. S. Frierson, Jr. Gifts of reptiles included 69 specimens from Negritos, Peru, presented by Mr. Axel A. Olsson; 52 specimens from Louisiana by Mr. L. S. Frierson, Jr.; 41 from South Dakota by Prof. L. Alfred Mannhardt; 43 from Wisconsin by Mr. F. J. W. Schmidt; and 24 from California by Mr. L. M. Klauber.

Accessions in the division of fishes include 730 specimens by gift, 372 from Museum expeditions, 348 by exchange and 136 by purchase. As in former years, contributions from the Lincoln Park Aquarium were important and valuable. Three lots were received from this source during the year, 198 specimens in all. Among them were several species not otherwise represented in the Museum and some, received in fine condition, were mounted for exhibition. Other donations of fishes were received from Mr. Hans Krueger of Spooner, Wisconsin, Mr. Gustav Mann of Chicago, and Mr. Julius Friesser of Chicago. An exchange with the United States National Museum resulted in the acquisition of 326 specimens from the republic of Salvador and another with the University of Michigan, although of only 22 specimens, included paratypes of several recently described species. Some 200 specimens of fishes collected incidentally by Mr. L. L. Walters on the Captain Marshall Field expedition to Georgia formed a further important accession.

Most of the 4,377 insects accessioned were exotic species and all were donations except 53 specimens obtained by Captain Marshall Field expeditions. The largest and most valuable gift, received from Dr. B. E. Dahlgren, consisted of 3,007 Guianan wasps and ants with 160 of their nests. This acquisition was of special value because the nests of nearly all the species were represented. Examples of insect architecture, on account of the aggressive nature of most of the builders, are by no means common in collections. Other gifts of insects include 392 butterflies, moths, and beetles from Dr. and Mrs. C. E. Hellmayr; 359 Norwegian insects from Dr. Sven Narbo; and 343 African butterflies and moths from Major A. M. Collins. Prof. G. H. French of Herrin, Illinois, presented five types of butterflies and moths described during his long and active career as a teacher and entomologist. Gifts of invertebrates, other than insects, consisted mainly of a collection of 1,952 East Indian shells donated by Mrs. W. J. Ammen of Chicago.

EXPEDITIONS

ANTHROPOLOGY.—The Museum maintained four expeditions this year in the interest of the Department of Anthropology.

The Field Museum-Oxford University Joint Expedition to Kish, Mesopotamia, resumed work October 15th, 1924, and continued its operations without interruption until March 15th of this year. Mr. Ernest Mackay, field director and excavator, was this season assisted by Mr. Talbot Rice of Christ Church, Oxford; and Pather Eric Burrows S.J., an Assyriologist of Oxford, was sent out as a substitute for Professor Langdon whose professorial duties prevented his absence from the university. The work was concentrated on completing the excavation of the early Sumerian palace partially excavated a year previously, and on extensive research in the vast city ruins of eastern Kish, where remarkable discoveries of cuneiform tablets and objects illustrating the daily life of the Babylonians of the time of Nebuchadnezzar had been made early in 1924. A rich harvest of beautiful copper utensils, gold jewels and ornaments of precious stones rewarded the excavators in the great Sumerian palace. Copper mirrors and hairpins tipped with lapis-lazuli knobs, as well as copper vanity cases containing manicure sets of pincers, tongs and nail-files, together with paint dishes and remains of brushes for coloring lips, cheeks and eyebrows, afford an intimate glimpse into the boudoir of a Sumerian lady. The excavations were suspended temporarily to permit Mr. Mackay to do research-work in the Island of Bahrein on behalf of Sir Flinders Petrie. Active operations were resumed at Kish last October, and Professor Langdon has left for Baghdad personally to take charge of the work which will be extended to a site sixteen miles from Kish, where a very ancient settlement, now named Bughatait, has been discovered. At this place painted pottery and clay tablets inscribed in pictographic script were discovered during last season. It is projected also to proceed now to excavate the great temple of the mother goddess of Kish situated near the palace in eastern Kish, called Harsagkalamma in the inscription recovered last year at the Library Mound. Mr. Dudley Buxton, lecturer in physical anthropology at the University of Oxford, and Mr. Henry Field are on their way to Baghdad to join Professor Langdon. It is their intention to secure data and photographs of the present inhabitants living around Kish for correlation with the skeletal material dug up during the last year.

In view of the universal interest of the public in the Museum's work at Kish and numerous inquiries received from all parts of the country and abroad, the Director takes pleasure in announcing that the first report of Mr. Mackay's excavations of the cemetery "A" at Kish has been

published by the Museum and is now available for distribution. He also desires to call attention to Professor Langdon's book "Excavations at Kish," Vol. I, published this year, copies of which are for sale at the entrance of the Museum.

As Professor James H. Breasted of the University of Chicago visited Egypt on behalf of the Oriental Institute of the University in the beginning of the year, the Museum availed itself of this opportunity and asked for his co-operation in extending the Egyptian collections of the Institution. Plans for the future development of the Egyptian Section were discussed with Professor Breasted, and it was decided to increase the collections at present along the line of statuary, alabasters, and textiles. In accordance with this plan he secured for the Museum a granite statue of the architect Senmut, 9 fine bronze figures, 1 rare bronze sistrum, 154 alabaster vases and bowls, and a magnificent collection of 580 Egyptian and Coptic textiles including many complete garments and rugs.

Under the auspices of Captain Marshall Field, Dr. A. L. Kroeber, professor of anthropology at the University of California, was entrusted with an archaeological mission to Peru for the specific purpose of determining culture periods by means of stratigraphic methods. He arrived at Lima January 20 and left Peru July 1. The season and the quite exceptional weather conditions in February and March, resulting in swollen rivers that remained high for months subsequently, practically dictated a limitation of operations to the coast region. The area from Lima south to Nazca, a stretch of 250 miles, was selected for excavations. It comprises ten consecutive coast valleys which are: Chillón, Lima, Chilca, Mala, Asia, Canete, Chíncha, Pisco, Ica, and Nazca. Two of these valleys, Mala and Asia, are wholly unexplored. Canete, the next valley beyond them, which is considerably larger and richer, was also found to be unknown scientifically, although more or less rifled by pot-hunters. Consequently his principal efforts were concentrated on this valley at one site of which he succeeded in discovering a type of pottery and culture new to science. It is a varied type of the wide-spread ancient culture of Nazca. After some search he was fortunate in finding remains of this culture stratified below the remains of the later, but likewise pre-historic, Chíncha culture. In the valley of Lima he also discovered a stratification which proves definitely that the culture and pottery type known as Proto-Lima is earlier than the Chancay and related cultures which are most commonly found in and about Lima. These two stratifications bear on the history of the development of ancient Peruvian civilization, and, inasmuch as only about four deposits of this kind

have been heretofore encountered or at least recorded, the discovery of these two may be regarded as very fortunate and significant. One northern valley, that of Trujillo, was briefly visited as a check and balance on the work in the south. An interesting collection of 181 specimens was secured there, containing several pieces of pottery of a new type and suggesting the presence somewhere in northern Peru of a type of ancient civilization which is still unknown. Dr. Kroeber states that the archaeological exploration of Peru is much less complete than is generally supposed; not more than half of the coast and not more than one-tenth of the interior are scientifically known. The available data suffer from being disconnected. The greatest need is for exploration which is systematic and continuous in regard to the areas covered. Dr. Kroeber was aided in his work by the sympathetic co-operation of the Peruvian Government and the active support of Dr. J. C. Tello, Director of the Peruvian Museum of Archaeology. It is planned that Dr. Kroeber will visit Peru again next summer on behalf of the Institution.

It is gratifying to report that an endowment made by Julius and Augusta N. Rosenwald has enabled the Department to resume work among the North American Indians. Arrangements were made with Mr. M. G. Chandler, who for many years lived among the central Algonkian tribes, has an unusually intimate knowledge of their customs, and by adoption is a member of the Potawatomi. This tribe once occupied the site of Chicago, at the time of the first white settlement, and it seemed desirable to gather and preserve as many relics as possible of the Indians who formerly inhabited the Chicago vicinity, with a view to forming an exhibit parallel to that of the mammals and wild flowers of the Chicago region. During August, October and November, Chandler visited the Potawatomi and the related tribes, as the Menominee, Winnebago, Misstassini, and Sauk and Fox, widely scattered over Iowa, Kansas, and Michigan; the use of an automobile permitted him to reach many small detached and roaming groups of these Indians. He first camped at Crow Settlement in the Menominee Reservation, where he obtained a good Menominee collection, and then proceeded to the Winnebago settlement near Wittenberg, where several good specimens from that tribe were procured. A brief visit was paid to the Potawatomi settlement to the northeast of the Menominee Reservation, but it seemed advisable to proceed to Kansas for collecting Potawatomi material. Before his departure Chandler attended two important ceremonies of the Menominee,—a summer feast and a dream-drum ceremony. The summer feast is held by the pagan Menominee to keep up the characteristic native games of the men and women. Among the articles received from these people, and also later from the Potawatomi

are small bundles, called "Man's Business" and "Woman's Business." The former contain at least a miniature La Crosse racket, but may also include a miniature La Crosse ball, a miniature war-club, bows and arrows, or even a small canoe. Offerings of tobacco are made to these articles from time to time, for the purpose of obtaining success in games or vocations. At this summer feast the games called "Man's Business" and "Woman's Business" are played. In the morning La Crosse is played by the men, and in the afternoon bow and counters by the women. The La Crosse racket bears a certain resemblance in outline to a ball-headed war-club, the latter being the weapon carried by the Thunders. The drum ceremony was held for a rather unusual purpose. Four drums were set up within the dance enclosure with all the sacred paraphernalia which go with each drum, and representatives of the four drum societies were present. The purpose of the ceremony was to notify the Winnebago of the intention of the Menominee to present them with two of these drums. The drums were used successively by a group of musicians who passed from drum to drum in a clockwise direction; that is, following the movement of the sun, from east to south, and south to west, and west to north. At the close of the day speeches were made to the visiting Winnebago, expressing the intention of the Menominee to give them the two drums intended for them, the Winnebago making return speeches. A trip was then made to the reservation near Mayetta, Kansas. There Mr. Chandler was the guest of John Shaubena, grandson of the original Shaubena who was chief of the Potawatomi, Chippewa, and Ottawa during the Blackhawk War, at which time he proved a valuable friend to the white settlers of the Chicago region. At this reservation practically every family is from the vicinity of Chicago. They were holding their annual fair, which includes parades and dancing in costume. Many specimens were located, and those most interesting were purchased. In October, he again went to Wisconsin, stopping at various Winnebago camps. On his way there he made connection with Potawatomi related to him by adoption, who daily offered specimens in quantity and of a quality far superior to anything he had suspected them of owning. The difficulty in this region was that the distances between homes were so great and the country so wild that trails could not be traversed by automobile, so that it was not possible to visit many families in a day. He witnessed several meetings of the Medicine Lodge held in an isolated spot in Forest County, Wisconsin, and, though it is contrary to the rules of this organization to admit outsiders to the lodge, an exception was made in his favor, and he was able to take notes on the ceremony, which he hopes to write up later. The ceremony resembles the Menominee and Ojibway rites more closely

than that of the Winnebago. The last move of the expedition was most fruitful, as during this time the greatest quantity of rare Potawatomi material was collected, which now places the Museum in possession of a representative collection from this tribe.

Assistant Curator Linton left at the end of October for an ethnological exploration of the island of Madagascar, where he is planning to stay for about two years. During November he spent two weeks in England, studying the Polynesian and Madagascar collections in the British Museum of London, as well as in the museums of Cambridge and Oxford. He proceeded to Paris, where he established connection with French officials and institutions, and sailed December 16th from Marseilles for Madagascar.

BOTANY.—The Captain Marshall Field Botanical Exploration in Peru was continued during 1925 by Dr. A. Weberbauer. He collected for six weeks in February and March in the Province of Moquegua and the Department of Tacna, securing 242 numbers or over 1,000 specimens. His material is of great interest and has been organized ready for determination. Upon completion of this, the largest duplicate set still available is being sent to the Botanical Garden and Museum of Berlin in accordance with the collector's stipulation. In this connection it is very satisfactory to record that Dr. Diels, Director of the Garden has generously offered the Field Museum as complete a set as possible of essential portions of the Weberbauer botanical types collected before the war, which are deposited at Berlin. Since these specimens are not now available in this country this will be an acquisition of the greatest value to American botanists studying western South American plants.

Another important addition to the herbarium of South American plants will be a set of the collections made in 1925 in Peru and Chile by Dr. F. W. Pennell under the joint auspices of The Academy of Natural Sciences of Philadelphia, the Gray Herbarium of Harvard University, Mr. Oakes Ames (for the Ames Botanical Laboratory) and the Field Museum of Natural History (under the Captain Marshall Field Fund). His work in Peru, over a period of several months, centered about Arequipa and Cuzco in southern Peru and about Canta, northeast of Lima. In Chile he collected chiefly in the Cordillera near Santiago and south as far as the island of Chiloe. He obtained 2,620 numbers or about 10,000 specimens. In a preliminary report to the Director, Dr. Pennell has stated: "If I may interpret the results by my success in obtaining Scrophulariaceae, it is evident that the collections will contain much that is new to science."

Mr. A. C. Persaud, who for some years had been collecting British Guiana woods, early in the year was obliged by sickness to give up the work which he was then carrying on along the Demerara River above Wismar. News of his death in Georgetown on July 31 was received with great regret. His reliable collections, accompanied with herbarium specimens are unique among the department's accessions of woods from tropical countries. It is only on the basis of such collections that the knowledge of foreign woods can be systematically advanced.

GEOLOGY.—During the year the Captain Marshall Field Paleontological Expedition to Argentina disbanded temporarily after storing the equipment. Some reconnaissance work was subsequently carried on by Associate Curator Riggs along the southern coast of the Province of Buenos Aires and westward in the Territory of Nequen with a view to planning future collecting. Two months were then spent by Mr. Riggs in visiting European museums on the return trip.

Summarizing the material collected by this expedition since its entry into the field in the fall of 1922, it includes fossil mammals from Eocene, Oligocene, and Miocene formations of southern Argentina and from the Pleistocene formation of Bolivia, also fossil shells and plants from the marine Oligocene and dinosaurs from the Upper Cretaceous formation of Argentina. The Pleistocene fossil mammals collected in Bolivia include skulls and partial skeletons of the horse, *Equus andeum*, the short-legged, but horse-like *Hippidium*, species of llamas and related animals, some of which approach the modern camel in size; also skulls, jaws and tusks of *Mastodon* of distinctly South American species. Along with these immigrants from other continents were collected specimens of native stocks, including skeletons of the ground sloth, *Scelidotherium*, and skulls, jaws, legs and other parts of the greater ground sloths, *Lestodon* and *Megatherium*. Carapaces and internal skeletons of the ponderous, shell-covered glyptodonts, a skeleton of a smaller armadillo and parts of the long-limbed, trunk-bearing *Macrauchenia* were also included.

From the Miocene clays and sandstones of southern Argentina there were collected skulls and parts of various ground sloths smaller in size but related to the great sloths of the Pleistocene; carapaces, skulls, legs and other parts of the lesser glyptodonts and of the armadillos. Many fine skulls and other parts of river-dwelling animals, ranging in size from that of the tapir to that of the hippopotamus are included in the collection. They belong to the genera of *Adinotherium*, *Homalodonto-*
therium, *Nesodon* and *Astrapotherium*. Numerous skulls, legs, feet and



JAMES SIMPSON-ROOSEVELT ASIATIC EXPEDITION.

ROUTE OF THEODORE AND KERMIT ROOSEVELT.

RETURNING ROUTE OF GEORGE K. CHERRIE AND SUYDAM CUTTING.

a few complete skeletons of the little cony-like protypotheres, similar specimens of rodents and of the somewhat larger flesh-eaters, are among the many bizarre animals included in these collections. More surprising are the leg bones of a gigantic bird similar in size to the Moa of New Zealand.

Of the Eocene mammals collected in the central territories of Patagonia, specimens of the great *Pyrotherium* and *Parastrapotherium* are the most notable. Specimens of these rare and little known animals include jaws, tusks, molar teeth and isolated parts of skeletons. Animals of intermediate size, including *Asmodeus*, *Leontinia*, *Astraponotus*, *Proadinotherrium*, *Rhynchippus* and others are represented by fine series of skulls. Other specimens include such mammals as the primitive flesh-eaters, the gnawers, and other inhabitants of river, forest and plain which have left no modern representatives and admit of no close comparisons. The great flesh-eating bird, *Phororachus*, is represented by a good skull and parts of the skeleton.

ZOOLOGY.—Five zoological expeditions were in the field during 1925. Two of them were of major importance, being to foreign countries and of long duration, while three of them were to points in the United States and Canada and for relatively short periods of time. All were highly successful and, although but a small part of the material collected had actually reached the Museum at the close of the year, it is evident the results of these expeditions will be among the most noteworthy in the history of the Institution.

Of first importance was the "James Simpson-Roosevelt Asiatic Expedition" to the western Himalayas, the Pamirs and Turkestan. The first plan for this expedition originated with Col. Theodore Roosevelt, Jr. and his brother Mr. Kermit Roosevelt, sons of the former President of the United States. Like their father, both the younger Roosevelts have an extraordinary interest in natural history and a knowledge of animal life far beyond that of the average sportsman. Therefore, in planning a trip for themselves, they thought immediately of giving it a scope which would make it of lasting value to science. This was beyond their private means, so they decided to affiliate themselves with a public museum of natural history and chose Field Museum. They made their desires known to President Stanley Field, and the matter was brought to the attention of Mr. James Simpson, a trustee and the donor of the Museum's well known auditorium, James Simpson Theatre. Mr. Simpson, thereupon, agreed to provide all necessary financial support for the expedition, involving no remuneration for the

Roosevelts, but making it possible for them to carry all desired equipment for general zoological collecting and to employ trained assistants to cover special fields. The trip thus became a museum expedition and was given the title "James Simpson-Roosevelt Asiatic Expedition of Field Museum of Natural History." Owing to the prominence of the principals, the expedition has received much public attention and its progress has been followed by the press of the entire world.

The party sailed from New York, April 11th, including, besides Theodore and Kermit Roosevelt, a well known naturalist, Mr. George K. Cherrie, and a volunteer photographer, Mr. Suydam Cutting. They arrived at Bombay, May 11th, and continued at once by rail and automobile to Srinagar in Kashmir. Here some days were spent in final preparations and in arranging for transport. In this they were greatly assisted by the cordial cooperation of the British Resident, Sir John Wood. May 19th, they left Srinagar with a caravan of 60 ponies and proceeded via Zoji Pass to the mountain city of Leh, which they reached without mishap about June 1st. From Leh, their course lay northward through the heart of the Himalayas. In order to maintain the organization of their caravan, it was necessary to push on rapidly and but little time was available during this part of the trip for hunting or collecting. However, they improved every brief opportunity and succeeded in obtaining several specimens of the Burrhel or Blue Sheep (*Pseudois nahura*) and the Tibetan Antelope (*Pantholops hodgsoni*). A few birds and small mammals, prepared between marches at late hours of the night, also were collected in this region. The route led across the Sassar, Karakoram, and Sujet passes and for more than two weeks the expedition was never below an altitude of 15,000 feet. Being more than two weeks in advance of the earliest regular spring caravans, the expedition encountered unusual difficulties in the way of unbroken trails, snow-fields and swollen streams. Fourteen of the ponies were lost enroute, partly through lack of endurance and partly through eating a poisonous weed. With some good fortune and much hard work, however, all difficulties were overcome and, July 5th, the party was at Sanju Bazaar in eastern Turkestan with the high Himalayas left behind. A few days later they arrived at Yarkand, the principal settlement in this part of Turkestan, where they were cordially received by local Chinese officials.

At Yarkand, the party was divided. To interview officials and prepare the way for later work when the whole expedition should reach that region, Mr. Cutting set out alone for a quick trip northwestward to Kashgar. Mr. Cherrie remained to work slowly northward across central Turkestan, stopping at convenient points to collect birds, small mammals, and reptiles. Meanwhile, the Roosevelts made haste

to reach the Thian Shan Mountains for big game hunting. They left Yarkand, July 13th, and crossed Turkestan to Aksu in twelve days, a distance of 280 miles, with many streams to ford, with stretches of desert to cross, and with hot summer weather in contrast to the cold winds of the high mountains just traversed. Leaving Aksu, July 27th, they continued northward over the Muzart Pass in the Thian Shan Mountains to the vicinity of the upper Tekkes River. Here, in the heart of southwestern Asia, they were at last enabled to devote several weeks to continuous big game hunting, and their efforts were attended with great success.

The collection of large mammals which was obtained in the Thian Shans covers a wide variety and includes a number of specimens of unusually high quality. The largest animals secured were three fine males of the Altai Wapiti, a large deer having general similarity to the American Elk or Wapiti. Other game included the Thian Shan Sheep (*Ovis karelini*), the Siberian Roe Deer, and the Asiatic Brown Bear; but perhaps most important was a series of the Thian Shan Ibex, including old males, females, and young and fulfilling all the exacting requirements of a comprehensive museum group. One of the male ibexes shot by Mr. Kermit Roosevelt is reported to have horns $59\frac{1}{4}$ inches in length, which is a record for this species and for all ibexes, the largest one previously known having a measurement of 58 inches.

Leaving the Thian Shans, the Roosevelts hurried on to arrive at Kashgar, September 28th, and there to make arrangements to hunt in the Russian Pamirs for the famous Marco Polo's Sheep, one of the principal objects of the expedition. Although formerly fairly common in the Pamirs, this sheep has become increasingly difficult to obtain, and native reports in Kashgar were discouraging, so it was with some misgivings that this hunt was undertaken, especially since success was to be attained only in the limited time remaining before the closing of the passes to bar return to India. In three weeks' time, however, the hunters went from Kashgar into the Russian Pamirs and came out at Misgar to send a message, October 23rd, stating that they had obtained four fine rams of Marco Polo Sheep and several younger animals, sufficient for a museum group. Thence they hastened back to India via the Hunza Pass, having received special permission to do so through the courtesy of the Viceroy and Sir John Wood. Their safe arrival in Kashmir was reported November 3rd.

While the Roosevelts were finishing work in the Thian Shans and making their dash into the Pamirs, Mr. Cherrie gradually worked on to the Thian Shans and was met there by Mr. Cutting, September 7th.

Further collecting of birds and small mammals was done there and then they returned to Kashgar whence they started homeward via Russian Turkestan and Constantinople, carrying with them practically the entire collection made by the expedition. This included some 21 skins, skulls and bones of large game, 700 to 1,000 skins of birds and small mammals, and tanks of reptiles and amphibians preserved in alcohol or formaldehyde. They journeyed overland northwestward and crossed the Russian border at Irkeshtan, November 6th. Ten days later they reached the railhead at Andijan and there arranged for railway transport of themselves and the collections to Batum on the Black Sea. The route was via Samarkand and Bokhara to Krasnovodsk on the Caspian Sea, thence across the Caspian to Baku and to Batum via Tiflis. The baggage, including the collections, was delayed in transit, and Mr. Cherrie, after proceeding to Constantinople with Mr. Cutting, was obliged to return to Batum to insure its safe delivery. Mr. Cutting returned direct to the United States and reports from Mr. Cherrie at the close of the year were to the effect that the delayed baggage was intact and forthcoming.

After returning to India, the Roosevelts engaged in a short hunt in which they secured four male specimens of the Barasingha or Swamp Deer. In late December they planned hunting in the Central Provinces accompanied by the head forester of India, Sir Henry Farrington. Still later, it was their intention to go to the northern province of Nepal and hunt with the British Resident with the special object of securing the Indian Rhinoceros.

Complete returns from the Simpson-Roosevelt Expedition are not available, but in the latest report, December 2nd, the list of large mammals obtained is as follows: Thian Shan Ibex, 12 specimens; Marco Polo's Sheep, 8; Thian Shan Sheep, 3; Burrhel or Blue Sheep, 3; Tibetan Antelope or Chiru, 3; Asiatic Wapiti, 3; Siberian Roe Deer, 4; Barasingha Deer, 4; Asiatic Brown Bear, 2; Himalayan Black Bear, 2.

The Captain Marshall Field Central African Expedition, which began work in 1924, continued in the field throughout 1925 under the direction of Mr. Edmund Heller and Mrs. Hilda H. Heller. The months of January and February were spent at high altitudes on Mount Ruwenzori, one of the highest mountains in Africa and situated near the border line between the arid plains and the great central rain forest. Camps were established at six different altitudes in the Butego valley on this mountain and a large collection was made, including some 800 mammals and a considerable number of batrachians and reptiles. Three days were spent at the snowline at an elevation of 12,000 feet and, fortu-



EGYPTIAN BRONZE STATUE OF THE LION-HEADED GODDESS SEKHMET.
BEFORE AND AFTER ELECTROCHEMICAL TREATMENT.

Two feet high.

nately, weather conditions were good. Travel of this kind is difficult in Africa since the elevated regions are uninhabited and but little help can be had from the natives of the warm lowlands who are very averse to the cold and snow of the heights.

From Ruwenzori the expedition went west into the Ituri forest and spent much time in the country of the Wambute tribe and the neighboring pigmies. After considerable time establishing friendly relations with the pigmies, their aid was enlisted to secure a specimen of that strange animal known as the Okapi, perhaps the most difficult to obtain of all large mammals now living. It is found only in dense dark forests and is very shy and elusive. Its habits are known only to the pigmies who inhabit these forests and hunt it with spears. A successful hunt was finally organized and a fine male Okapi, speared by the pigmies, was obtained and its skin preserved in excellent condition.

Later in the year the expedition moved eastward out of Belgian territory into northwestern Uganda. Here in the district of Kigezi large general collections were made under better climatic conditions than those of the Congo forest. British officials in Uganda afforded cordial cooperation and through a permit issued by the Governor, Mr. Heller secured a large male gorilla on the east side of the volcanoes near the boundary between Uganda and the Congo.

The specimens collected by the African expedition have been thoroughly cured, hermetically sealed, and stored at convenient points to be brought together finally and transported to the United States under personal escort after field work is completed. At the close of the year, the expedition was about to start back into the Congo to work in the region west of Lake Kivu with the special object of securing further specimens of gorillas.

A short expedition to southern Georgia was made during the summer by Mr. Leon L. Walters, taxidermist of the Division of Reptiles. The special object was material for a group showing the American alligator and its nest and eggs. Headquarters were made at Beachton, Georgia, where Mr. Walters enjoyed the hospitality and generous assistance of Mr. H. L. Stoddard and his associates of the U. S. Biological Survey. Alligators were by no means easy to secure, and all three of the methods in use by professional alligator hunters were employed. The first method is that of hunting at night from a boat with a headlight which "shines" the alligator's eyes. A second method is to bait tarpon or shark hooks, arranging them as a set, just above the surface of the water. The third and most interesting method, called poling, was also the most successful. In summer the larger alligators take up residence in holes in the marshes

from which most of the water has disappeared. A long cypress pole with a hook at the end is inserted in such a hole and twisted about until a firm hold is secured on the victim, which may then be pulled out.

The largest alligator obtained had a length of nine feet, eight inches, and complete plaster casts were made from it on the ground and other data taken for reproduction in celluloid. A record nest with 75 eggs was found and collected entire for the proposed group. In addition to the alligators, general collections of vertebrates were made to the number of 262, forming a valuable addition to the Museum's series from the southeastern United States.

Mr. Ashley Hine, bird taxidermist, was in the field in western Canada from April 28 to June 28 gathering especially needed birds for exhibition. During the month of May he worked at Johnston Lake, some 35 miles south of Moose Jaw, Saskatchewan. Here he found a colony of about 500 White Pelicans on an island four miles off shore, and three fine specimens needed for a Museum group were taken. Color sketches were made of the fleshy parts of the freshly killed birds and other important data recorded for later use. Other birds obtained at this locality included various ducks, Lesser Snow Goose, grebes, gulls, and shorebirds. He then went to Banff and northward to work about several small lakes in the vicinity of Edmonton, Alberta. A further variety of birds was obtained here including grebes, knots, sandpipers, hawks, woodpeckers, finches, and warblers. All were especially selected and prepared for mounting with the view to the highest quality of results. Numerous color sketches were made and special notes and accessory material were gathered. A total of 107 selected birds were preserved.

In September, a second expedition was despatched to western Canada, the particular object in this case being large mammals, especially Rocky Mountain Goats. This trip was carried out by Mr. Julius Friesser and Mr. H. C. Holling of the Museum's taxidermy staff. They proceeded to Golden, British Columbia and thence south to the small station of Skookumchuck. Here they met guides with pack and saddle horses with which they started into the neighboring mountains, October 8th. Some two days' travel brought them to White Swan Lake, a small mountain basin draining northerly into White River, which flows north and west into the Kootenay. From this base excursions were made to the peaks and basins fronting on White River. The region proved to be well stocked with an unusual variety of large game. Not only goats, but elk, moose, white-tailed deer, mule deer, black bear, and grizzly bear were found. Goats, however, formed the main objective, and, owing to the lateness of the season and the abundance of snow, hunting them pre-

sented unusual difficulties. A total of seven selected Mountain Goats was obtained, a large old male, a younger male, an old female, two young females, and two small kids, male and female. These answered all requirements for a museum group, and the other game taken included only one bull elk and one buck mule deer. Photographs and color sketches were made for use in background painting and samples of soil, rock, and vegetation were preserved for accessory work.

The expedition was materially aided by the cooperation of Canadian officials. Thanks are extended to the Game and Conservation Board of British Columbia for permits to take immature goats, and to local game wardens, Dennis Greenwood of Windermere and Gregory Thomas of Cranbrook, for cooperation and assistance.

The following list indicates the various expeditions in the field during the year:

| LOCALITY | COLLECTOR | MATERIAL |
|--|--|-----------------------------------|
| MESOPOTAMIA..... | Ernest Makay Talbot Rice Eric Burrows, S. J. | Archeological Collections. |
| EGYPT..... | James H. Breasted | Archeological Collections. |
| PERU..... | A. L. Kroeber | Archeological Collections. |
| IOWA, KANSAS AND MICHIGAN..... | M. G. Chandler | Ethnological Collections. |
| MADAGASCAR..... | Ralph Linton | Ethnological Collections. |
| PERU..... | A. Weberbauer | Herbarium and Economic Specimens. |
| PERU AND CHILE..... | P. W. Pennell | Herbarium Specimens. |
| BRITISH GUIANA..... | A. C. Persaud | Tropical Woods. |
| ARGENTINA..... | Elmer S. Riggs | Paleontological Specimens. |
| KASHMIR, TURKESTAN, THIAN SHAN MTS., PAMIRS..... | Theodore Roosevelt, Jr. Kermit Roosevelt George K. Cherrie Suydam Cutting | Mammals, Birds, Reptiles. |
| CENTRAL AFRICA..... | Edmund Heller Hilda H. Heller | Mammals, Reptiles. |
| SOUTHERN GEORGIA..... | Leon L. Walters | Reptiles. |
| SASKATCHEWAN AND ALBERTA..... | Ashley Hine | Birds. |
| BRITISH COLUMBIA..... | Julius Priesner H. C. Holling | Mammals. |

INSTALLATION, REARRANGEMENT AND PERMANENT IMPROVEMENT

ANTHROPOLOGY.—The activity of the Department of Anthropology during the year was largely centered on the installation of material for exhibition, but much useful work was also performed in the improvement

of conditions of study, exchange and storage collections. A total of seventy-three cases were installed for exhibition during this year.

An event of the year was the opening on the first of November of the new Micronesian and Polynesian Hall (Hall F on the ground floor), to which Assistant Curator Linton had devoted his energy until his departure for Madagascar. The chief attraction of this hall consists of an original Maori council-house from New Zealand, which was acquired by the Museum as far back as 1904, but which, for lack of space, could not be erected in the old building. Very few of these council houses have been preserved, and this house is one of the finest in existence. It is nearly sixty feet long with a width of twenty feet and an internal height of fourteen feet. It is the only Maori building extant that has a completely carved front, and its decorations show Maori art at its best. The mechanical skill and artistic ability of the Maori were lavished on the construction of his great council houses which were primarily council and guest houses, but which were also used as dormitories. They were usually erected as memorials of some great event, such as the birth of an heir to the principal chief of the tribe. The materials were selected with great care, the framework being hewn from trees which had been buried in river beds until they had lost their sap wood and become thoroughly seasoned. The ridge pole was the most important part, and was always made from a single log. That of this house is nearly sixty feet long, and weighs a ton and a half. All the upright timbers are carved with conventionalized figures of ancestors, while the rafters and ridge pole are painted with scroll designs. The spaces between the side posts are filled with panels of woven reeds. Long beds were made along either side of the house, and there was a small fireplace near the door.

The hall contains forty exhibition-cases. Ten of these have been grouped along the sides of the house; nine of these cases illustrate the highly developed culture of the Maori with good examples of their feather robes, wood carvings, weapons, stone and jade implements. The inhabitants of the Gilbert Islands are well represented by excellent suits of armor, weapons, clothing and ornaments, matting, basketry, utensils, and fishing appliances. Similar material is shown from the Marshall and Caroline Archipelago, Matty, Durour, and outlying Micronesian islands. The cultures of Fiji and Samoa are well illustrated, and to some extent also those of Hawaii, Marquesas, and Mangaia. A guidebook to these exhibits has been prepared by Assistant Curator Linton and will be brought out shortly.

The light-colored screens which after several experiments were devised and used in this hall throughout may be designated as a great

improvement, and are undoubtedly preferable to black screens in the halls with artificial lighting.

Good progress has been made with the installation of the Arthur B. Jones collection secured by Dr. F. C. Cole in 1923. Eight cases illustrating the culture of the Toba Batak of Sumatra, six cases of textiles, costumes and household utensils of the Menangkabau, Sumatra, and four cases showing the primitive cultures of the Sakai and Semang in the Malay Peninsula, have been installed. Three built-in cases were constructed in Hall G which is to contain the Arthur B. Jones collection. One of these has been erected in the center of the hall, and is divided into three sections which will be used for a Menangkabau miniature village group, a life-size group of Pygmies engaged in making fire, and a bride and groom of the Menangkabau in their ceremonial costumes. The built-in case in the northeast corner of the hall will harbor the Javanese orchestra formerly in Hall I, and that in the northwest corner holds the group of Bagobo weavers which is now almost complete. It is hoped that this hall will be completed in the first part of next year. Seven cases are already accessible to the public, being placed alongside the corridor dividing the east wing from the central section of the ground floor.

A built-in case, which on account of its dimensions (32 x 10 feet, 14 feet high in the interior) is a veritable room in itself, has been constructed in the Ernest R. Graham Hall at the south end of the recess in which the two Mastaba tombs are set. It is provided with a door on the west side which readily gives access to the room and permits easy shifting of exhibition objects. The top lights hidden behind ground glass insure an even diffusion of light over the exhibits. For the present the large granite statue of the Lion-headed Goddess Sekhmet, presented by Mr. Frank H. Cook, and selected sculptured bas-reliefs from the tomb of Bekenranef, a nobleman of high rank of the twenty-sixth dynasty (about 600 B.C.), are displayed in this case. In front of it and from the top of the view glass extending up to the ceiling is a transom case 30 feet long, 4 feet high, and 1 foot deep, likewise illuminated by concealed top-lights and containing a colored reproduction of a bas-relief which represents the procession of the sacred boat from Queen Hatshepsut's temple of Deir-el-Bahri (eighteenth dynasty). The oil-painting by Andrew McCallum, depicting the Rock-temple of Abou Simbel, presented by Mr. Thomas S. Hughes this year, has been hung on a pilaster on the east side of the Egyptian Hall. A new label has been provided for the reproduction of the Rosetta Stone.

Several notable additions and changes were made in Stanley Field Hall, to render accessible to the public the results of recent expeditions.

A silver zebu acquired by the Captain Marshall Field Expedition to China (illustrated in Plate XLII of the Annual Report for 1923) was added to the Chinese antiquities in Case 7. The Roman bronze table and other bronze and glass objects from Boscoreale were temporarily removed from Case 6 to make room for the Egyptian statue of the architect Senmut acquired for the Museum by Professor Breasted. A selection from the important collection of ancient Egyptian and Coptic textiles has been displayed in Case 16. These include an ancient rug, two linen tunics decorated with medallions and borders in tapestry weave, an embroidery in white on purple ground, and many smaller pieces in well preserved bright colors, some even of silk and silk mixed with linen. The designs are very interesting and consist principally of vine-leaves, grapes, hares, birds, huntsmen on horseback, figures of women and children. One panel is decorated with the figure of a dancing-girl brandishing a tambourine.

In Edward E. Ayer Hall a case of Etruscan pottery was installed, and re-arrangements were made in three cases of Boscoreale bronzes.

The three copper weapons from Alaska presented by Mr. Homer E. Sargent have been added to Case 8 of Mary D. Sturges Hall. The Karok buckskin skirt and apron presented by Miss G. Nicholson have been installed in Case 2 of Hall 6; and the Saltillo serape, a gift from Mr. Sargent, in Case 1 of Hall 8.

Two cases illustrating the Tobacco Society and Medicine bundles of the Crow were installed, completely labeled and placed in Cases 23 and 24 of Hall 5. These contain the exchange material received this year from Messrs. M. G. Chandler and W. Wildschut, combined with material previously collected for the Museum by Mr. S. C. Simms.

Two cases, one showing clothing from Huon Gulf, northeastern Guinea, another of household and industrial objects from the North Coast of New Guinea, have been added to Joseph N. Field Hall.

The addition of 115 objects made by Mr. Edward E. Ayer last year to his pewter collection necessitated the installation of a new case and re-installation in four cases in Hall 23. This room now presents a somewhat crowded appearance, and as the new type of built-in case has proved successful, it has been decided to discard the eleven standard cases and replace them with specially built cases running along the walls and illuminated by encased top-lights.

The collection of rhinoceros-horn cups from China, presented by Mr. John J. Mitchell, was catalogued and labeled immediately and placed on exhibition in two standard cases in the center of Hall 24 (East Gallery). A case of Chinese wood, root and bamboo carvings and a case

of Chinese fans were installed, and will be placed on view as soon as the labels have been printed.

After removal of the model of the Moon from the south end of the West Gallery, the space thus gained was occupied by four cases containing Chinese ivories, baskets, and lacquers. The installation of the exhibit illustrating how crickets are kept in China for singing and fighting purposes has been completed, and the case placed on exhibition at the south end of the East Gallery. Grateful acknowledgement is made to Associate Curator Gerhard for preparing specimens of the insects for exhibition and to Dr. James A. G. Rehn of the Academy of Natural Sciences of Philadelphia for determining their scientific names. In the present state of the work it is impossible to maintain a correct sequence of the exhibition cases in the East and West Galleries, as additions and changes are constantly made and as, in accordance with the progress of work in the new halls on the ground floor, exhibits from Java, Africa, and India have to be transferred from the West Gallery to their new locations. At the completion of this task, it will be possible to re-arrange the East and West Galleries methodically. They will ultimately be entirely devoted to China and Tibet.

Room 38 has been converted into a workshop for receiving, laying out and installing new material. Nine old table-cases which contained Mexican and South American collections in storage were vacated and discarded, the material being placed in the storage room on the ground floor. This resulted in a great improvement of working conditions and made way for six more layout tables in Room 38. It now accommodates a total of 18 layout tables, whereby the work of the Department is greatly facilitated. Twelve layout tables were made for the offices and workrooms of assistant curators.

All American archaeological material, as far as it is not on exhibition, is now concentrated in the storage room on the ground floor. All exhibition cases temporarily placed in the clerestories were stripped of material which was arranged, sorted, stored, and identified with proper labels. All collections in work-rooms and storage rooms on the third floor have been subjected to a revised arrangement.

Last February the departmental library was removed from Room 39 in the southeast corner of the building, where it had been housed for four years, and was permanently transferred to the new racks in Room 53 adjoining the curator's office. This arrangement is very satisfactory, as it gives the curator without loss of time direct access to the library and places it under his immediate supervision. New cabinets were procured to contain maps, the catalogue cards, and the inventory volumes

with the accession files, in keeping with the style of the other office furniture.

In Room 35, the storage room for physical anthropology, new racks with trays were made for the accommodation of skulls and skeletal material. There are four sections, each consisting of fourteen cabinets, seven on each side. Each of these fifty-six cabinets contains eleven trays of white pine, making a total of 616 trays, which are calculated to hold about nine thousand skulls. A label-holder has been provided for each tray.

Modeler J. G. Prasuhn made progress on the miniature group of a New Guinea village, completing the men's assembly house, the young men's dormitory, and an outrigger canoe with sail. The group of Bagobo weavers from the Philippines, the figures of which were cast years ago in the old building, has been installed in a built-in case in Hall H; all the accessories were made for the group, the figures dressed and properly posed.

Two large and several small bronze figures from the Egyptian collection developed during the year had cases of malignant patina which threatened to destroy them. These have been successfully treated by Associate Curator H. W. Nichols in the chemical laboratory of the Department of Geology by means of the recently perfected electrolytic process. Familiarity with the process was acquired by treating a number of smaller bronzes to remove disfiguring incrustations. The results of this process have been so successful that not only has the dangerous progressive corrosion been eliminated, but also much elaborate detail of unsuspected designs has been discovered. The experience with these bronzes has been such that there will be no hesitation in applying the process in the future to whatever bronzes may need it.

Modeler Prasuhn restored 24 objects from Kish, 19 from Egypt, 4 from Italy, 7 from Mexico, 41 from China, and 9 from Pacific Islands. Mr. T. Ito restored 144 pieces of Peruvian pottery, 40 pieces of pottery, stone, and bronze from Kish, 18 pieces of Cameroon pottery, 11 pieces of pewter, and 6 Japanese ivories. 10,931 numbers were marked on specimens.

BOTANY.—In the exhibition halls of the Department of Botany the task of reinstallation which was begun last year has been carried forward as rapidly as possible with the elimination of bottled specimens and black backgrounds. The Hall of Plant Life (Hall 29) has thus been completely reinstalled as far as possible with the material on hand and numerous additions have been made to the plant reproductions and models which are the conspicuous feature in the hall. These



UNDERSEA GROUP OF SHARKS AND RAYS.

COLLECTED BY THE CAPTAIN MARSHALL FIELD ZOOLOGICAL EXPEDITION TO TEXAS.

Presidency and background by Mr. Leon L. Fray.

include some common plants of the northern temperate zone, such as the paper birch, crab apple and sugar beet, as well as many less familiar subtropical and tropical ones.

The spiderworts are now represented by a reproduction of the large and attractive South American *Dichorisandra*, to which will be added one of the more inconspicuous but better known forms. Other additions to the monocotyledons are a flowering *Tacca*, a yam vine bearing flowers and aerial tubers, a *Schomburgkia*, a West Indian orchid chosen for its large flask-like water storage organs or pseudobulbs, the fruiting spadices of a screwpine or *Pandanus* and of a Palmyra palm, the latter interesting among the Palms on account of its large egg-plant-like fruits, which were obtained in the Georgetown Botanical Garden by the Stanley Field Guiana Expedition in 1922. A series of sections of a sprouting coconut showing interesting stages in the germination have also been added to the palms exhibit. At the time the *Granadilla* vine was reproduced in its flowering condition good fruits were not obtainable but these were readily secured in British Guiana where this passion flower is commonly cultivated and have now been reproduced and added to the vine. A section of a *Granadilla* and some of the lesser *Passiflora* fruits have also been added to this exhibit.

A flowering branch of the spiny *Catesbaea* with its long pendulous flowers and small orange-like fruits has been added to the case containing the Madder family. The Borages have been illustrated by a reproduction of a flowering and fruiting branch of the Scarlet *Cordia*, or Geiger Tree, obtained last year in Key West.

To the Spurges there has been added a fruiting branchlet of the Tung-oil tree which is of such great importance to the modern varnish industry and has recently been introduced into commercial cultivation in the United States.

A flowering branch of the Frangipani and of a related British Guiana forest tree (*Plumiera articulata*) with its large curved paired pods have been reproduced and added to the case containing the Dogbanes.

The Myrtaceae have hitherto been represented chiefly by the Eucalyptus and the Guava, but fruiting branches of the bright red pear-shaped Malay- or Malacca-apple, (*Eugenia malaccensis*), the "Curasson-apple," (*E. javanica*) obtained in Surinam and the "Java-plum" (*E. jambolana*) from the Plant and Seed Introduction Station in Florida have been added during the year and installed in their appropriate place.

The Cactus exhibit has been enhanced by the addition of a modeled flowering tip of a candelabra cactus (*Cereus pentagonus*). In one of the expanded flowers of this model is to be seen a specimen of the long-

tongued bat that in its native region is a visitor to this night blooming cactus either for the nectar or for the insects, or both, to be gathered within the large blossoms. Another addition to the cactus case is a *Rhipsalis* from Trinidad, a slender epiphytic un-cactus-like plant, which hangs like masses of green threads from the branches of the trees where it grows.

To the Bladderworts there has been added a flowering *Utricularia* plant, mounted together with an enlarged section of its flower and a model of a single enlarged bladder or trap with its typical catch.

A piece of a branch of a "cluster-fig" (*Ficus glomerata*) from India with its grape-like bunches of fruit, some white and purple figs, a sugar beet from Illinois, a sugar cane from Louisiana for the sugar exhibits, are also on the list of plant reproductions added during the year.

A young unexpanded leaf of the *Victoria regia* has been modeled for this group which was prepared last year. A section of the *Victoria regia* flower constitutes an interesting addition to the flower forms represented by models in the Hall of Plant Life. This model and the young leaf of the *Victoria regia* were the last of the many creditable pieces of work produced by David Henner, before his untimely death by accidental drowning while swimming at the Dunes last summer. Mr. Henner was one of the most talented and able of the artists and preparators who by their skill have contributed to the plant reproductions in this hall.

In the adjoining hall, Hall 25, containing the palms on one side, the vegetable food products on the other, reinstallation has been begun with the cane and beet sugar exhibits. In the economic collections the fats, oils, sugars and wood distillation products have received special attention. Typical samples have been selected and sealed in glass tubes for exhibition.

In the Herbarium some further progress has been made in the study of the 1922 and 1923 Peruvian collections by botanists at other institutions (cf. 1924 Annual Report of the Director, 314, 1925) and several have undertaken the determination of further groups: Mr. E. P. Killip, U. S. National Museum, is identifying the *Acanthaceae*, *Amaryllidaceae*, *Aristolochiaceae*, *Brunelliaceae*, *Convolvulaceae*, *Coriariaceae*, *Dilleniaceae*, *Hypericaceae*, *Juncaceae*, *Laciniaceae*, *Liliaceae*, *Loranthaceae* (excluding *Phoradendron*), *Myricaceae*, *Myrsinaceae*, *Myrtaceae*, *Rosaceae* (excluding *Rubus* and *Hesperomeles*), *Styracaceae*, *Tropaeolaceae* and *Vitaceae*; Dr. J. N. Rose, U. S. National Museum, has assumed responsibility for the genera *Hoffmanseggia* and *Caesalpinia* and the subfamily *Mimoseae*; Prof. E. M. Gilbert, University of Wisconsin, is studying a number of the fleshy fungi; Dr. I. M. Johnston, Gray Herbarium, has

named a small miscellaneous collection in addition to his special groups. The Museum has published a short paper by Mr. J. F. Macbride on the *Psoraleas* (Publ. 231 Bot.) together with notes on a few other species, mostly legumes.

The principal organization work of the year in the herbarium was the preparation for study of the Gaumer collections made from 1917 to 1921 in Yucatan. The determination of these valuable sets has kindly been undertaken by the botanical staff of the U. S. National Museum, particularly by Dr. Paul C. Standley, whose especial fitness for this work is indicated by his well known and admirable volumes on the woody plants of Mexico. The earlier Gaumer collections, prior to 1917, were largely studied by the late Dr. Millspaugh, but for various reasons he did not have the opportunity at the time to continue this investigation. These recent collections, in so far as determined, total 1,189 sheets. There are about eight duplicate sets that will be available for distribution in exchange with other botanical institutions when the clerical work connected with their organization is consummated.

The herbarium specimens of Illinois plants finally have all been withdrawn from the general collections and now form the basis for an herbarium which it is hoped will ultimately include a specimen of every species known to grow in the state. This special collection has been very creditably reorganized by Mr. Carl Neuberth so that it is now available for ready reference. Many additions, however, must be made before it will represent adequately the state flora.

GEOLOGY.—To the geological exhibits in Stanley Field Hall was added a case, one-half of which was devoted to models of dinosaurs and bones and tracks of these animals. In the other half of the case a series of fossil crinoids, mostly large specimens from the Borden collection, was installed. A number of specimens of fossil pine cones and branches from Patagonia collected by the Captain Marshall Field Paleontological Expedition to that country and some large fossil invertebrates collected by the same expedition were installed in another case in this hall. Most of the specimens presented by Mr. William J. Chalmers during the year were installed in the cases of the crystal collection and of systematic minerals in Hall 34. In this connection a rearrangement of the contents of the crystal collection cases was made and about 200 new labels were installed. The specimens of the group of hydrous silicates, numbering 148, in this hall, were mounted on individual blocks upon a screen. New specimens received during the year were added to a number of groups in this hall.

In Skiff Hall the specimens in the bays of ten cases were mounted on individual blocks and brought nearer to the front. The labels of these specimens were correspondingly raised by means of wire supports. Specimens in the upright sections of eight cases were provided with an improved form of blocks in continuation of the work of last year. The cases remounted in this manner this year were those of iron, copper, lead, zinc, mercury, tin, nickel and rare-earth ores. They contained 1,028 specimens. New material in this Hall and in Hall 36 has been installed as fast as it was received. The asbestos collections in Skiff Hall were enlarged by the installation of additional specimens of prepared asbestos and by the addition of a series illustrating the preparation and use of rock wool. The lubricating oils, clays, peat and marble exhibits were also enlarged by the addition of newly acquired material. In connection with the installation of new labels for the iron blast furnace models, specimens of iron ore and manufactured iron made in Catalan forges in use in Brazil and collected by the Captain Marshall Field Brazilian Expedition of 1922 were installed adjoining the model of this forge. In addition to a large general label for the cement plant model, a series of six mahogany labels with gold lettering was installed within the case to explain briefly the nature of each group of machine shown. The large stump of the tree obtained from the coal mine at Zeigler, Illinois, presented by Mr. Walter G. Zoller, was mounted on a mahogany base and installed in Hall 36 in proximity to the general coal exhibit. To the model in this hall illustrating the formation of peat, a base representing underlying rock was added. To the exhibit of diamonds and associated rocks, there were added three cut diamonds and some associated minerals from the Murfreesboro, Arkansas, mines, presented by Messrs. Howard A. Millar and Austin Q. Millar.

As rapidly as they have been prepared for exhibition, the fossil vertebrates collected by the Captain Marshall Field Paleontological Expeditions in Argentina and Bolivia have been installed in Hall 38. Two large dinosaur leg bones, each over six feet in length and weighing 930 and 740 pounds respectively, were mounted on individual bases and placed adjoining the large dinosaur skeleton. Among vertebrates of Tertiary age, an entire case has been installed with specimens from the South American expeditions. These included a fossil whale skull, six and one-half feet in length, a beautifully ornamented carapace, twenty-eight inches in length, of an extinct armadillo, and several smaller specimens. A complete list is as follows: One carapace of the armored mammal, *Propalaeohoplophorus*; skulls of the South American fossil mammals, *Nesodon*, *Adinotherium*, *Proeutatus*, *Hapalops* and *Pachurukhos*; jaws

of *Pyrotherium* and of *Neoromys*; skull and jaws of a fossil baleen whale of undetermined species.

The skull of the baleen whale was collected from a marine formation (Patagonian Beds) which caps the pampas of Patagonia and is extended over a wide area. In this formation are found fossil whales of various kinds, immense oyster shells and other fossils of marine origin. Some of these fossil shells may be seen attached to the skull. This animal was one of the baleen, or whalebone whales which are still common in the south Atlantic and which may be frequently found stranded on the shores of Patagonia. These specimens are interesting not only as fossil animals but also in contributing unmistakable evidence of the marine origin of the great series of clays and sandstones of Patagonia which now lie as much as two thousand feet above high tide and form the surface of wide pampa-plateaus. The specimen obtained is of smaller size than the modern baleen whale and belongs to an extinct species not yet determined.

The preparation of the above specimens and of a large carapace, five feet in length, of a species of *Glyptodon* collected in Bolivia, comprise the major activities carried on in the laboratory of vertebrate paleontology during the year. The shell or carapace of the *Glyptodon* was collected in the Tarija Valley of southern Bolivia. This shell formed the body-covering of a huge animal which was common in Pliocene and Pleistocene times. *Glyptodon* belonged to a family of extinct animals (*Glyptodonts*), which at that period ranged from southern United States to the southern extremity of Argentina. In addition to their great size the *Glyptodonts* are of interest because of the horny covering which sheathed the head, body and tail and served at once as a covering and as a defensive armor. This characteristic it shared with the smaller armadillo, but carried the development one degree farther in having the bony dermal plates of which the shell is composed joined by sutures to form a rigid carapace. This carapace was doubtless covered outwardly with horny plates, which gave the armor a smooth and elastic surface. The top of the head was covered with a similar shield; the tail was enclosed in a series of overlapping rings. Protected in this way, the *Glyptodon* had but to crouch upon the ground, with head and legs drawn into the shell, and so remain secure from attack of any flesh-eating animal of his time. No doubt this immunity accounts for the long survival of these sluggish creatures and for their distribution over two continents.

Construction of a model of a typical brickyard was undertaken by Associate Curator Nichols in the latter part of the year. Preliminary inquiries brought out the fact that while a model of a small, simple

yard of the kind that was common some years ago would demonstrate clearly the principles upon which the industry is based, such a model would be misleading as an illustration of modern practice, since success in the present day brick industry depends upon quantity production and the use of elaborate labor-saving equipment. Therefore, it was decided to model a large, well-equipped modern yard. President William Schlake of the Illinois Brick Co., kindly offered hearty cooperation and after investigation, Yard No. 22 of this company at Blue Island, Illinois, was selected as especially suitable for reproduction. Surveys of the yard and a contour map of the yard and the clay pits were made by the Associate Curator. Superintendent Lambert and other officials of the company cordially assisted in this work. Numerous photographs were taken of details and sketches and measurements of the kiln sheds and buildings were made in order to insure accuracy of modelling. The model is now under construction. It is twelve feet long and three feet, six inches wide. It is on a scale of twelve and one-half feet to the inch. This scale makes human figures about one-half of an inch in height, and details of the machinery are readily visible. The ground and clay pits have been modelled in cement. The elaborately framed kiln sheds have been reproduced by the use of sheet copper and copper wire. The use of this material has enabled the elaborate framing of the timbers to be faithfully reproduced. There are also represented kilns in various stages of building, burning and removal and these in sufficient detail so that the methods of piling the brick are shown as well as the elaborate piping of the oil-burning equipment. Features still to be represented include models of the brick-making machines, dryers, power plant, steam shovels and accessory buildings.

A relief map of the rock surface under Chicago has also been modelled in the Department from data obtained from the Chicago City Department of Engineering. This relief represents the rock surface of the territory from Lawrence Avenue on the north to Lake Calumet on the south and from 56th Avenue on the west to points in Lake Michigan several miles east of the shore line. The horizontal scale of the model is eight miles to the inch and the vertical scale ten times the horizontal.

In the chemical laboratory quantitative analyses of five iron meteorites were made by the Associate Curator. Analyses of a gum from the Hopewell Mounds, of a specimen of Chinese cement and numerous qualitative tests for visitors or correspondents of the Museum were also made in this laboratory. Ten iron meteorite sections were etched. Treatment of antique bronzes for checking corrosion and restoring their surface was undertaken during the latter part of this year in this labora-

tory and very satisfactory results obtained. The method is an electrolytic and chemical one chiefly devised by the Metropolitan Museum of Art of New York City. For carrying on the work here and for permanent use a Weston voltmeter and ammeter with electrodes, switches and containers were added to the equipment of the laboratory. Other additions to the laboratory equipment included a filter drying closet and a small crucible furnace.

The lighting of the Department library was improved by providing it with five 200 watt reflectors. The office and library of the Associate Curator were provided with 240 feet of oak shelving. Five radio photographs for the Chicago Daily News were given by members of the Department staff during the year.

ZOOLOGY.—Installation in the Department of Zoology included several large groups of mammals, one systematic case of mammals, two systematic cases of birds, one group of reptiles, and one group of fishes. In addition, a number of single animals have been prepared, some of which have been installed and others are awaiting cases or rearrangement of space. In all, therefore, the zoological exhibits have received an unusual amount of addition and improvement.

The mammal group of greatest interest is perhaps that of the man-eating lions. The specimens for this group are the actual individuals described by Colonel J. H. Patterson in his book "The Man-Eaters of Tsavo." These animals, two large males of the short-haired maneless type found in the hot semi-arid coast of East Africa, killed and, in most cases, devoured more than 130 human beings. Their story is a most extraordinary one and they are perhaps the most famous of all lions. Their skins and skulls were purchased from Colonel Patterson by President Stanley Field and presented to the Museum. They had been preserved for a number of years and were not prepared originally with a view to museum exhibition. Therefore they offered unusual difficulty to the taxidermist and were mounted only by the exercise of much painstaking care and skillful manipulation. This was accomplished by Taxidermist Julius Friesser with the assistance of Mr. H. C. Holling, the result forming a striking addition to the groups of African game animals in Hall 22. A slight rearrangement of the exhibits in this hall was made in this connection. The group of Beisa Antelopes was removed from the south half of the hall to the north, thus bringing practically all the hoofed animals into the north half and leaving carnivores and primates for the south half. The group of Beisas was reinstalled in the northeast corner of the hall and provided with plain backgrounds on two sides which serve to improve the lighting of the group.

The beaver group was removed from its open floor case and reinstalled in a new position in the northeast corner of Hall 16. Here it was placed in a built-in section with a single view glass, the background was extended on each side and effective lighting provided, altogether making it a much improved installation. On the opposite side of the hall, in a similar situation, there was installed the Jaguar and Capybara group, material for which was collected by a museum expedition to Venezuela some years ago, but which had never been exhibited. The background, which had been painted for a different style of installation, was extended to the sides of the enclosure and the group arranged as a "built-in" exhibit. The scene shown is a tropical jungle of mangroves and ferns at the edge of a pool of water. The Capybara, largest of rodents, is represented by a family of two adults and several young. At one side, partly covered by the dense vegetation, a jaguar is stealthily approaching its unsuspecting prey. The whole effect gives an excellent and characteristic impression of life in the hot lowlands of the South American tropics.

A special exhibit of the "Mammals of the Chicago Area" was prepared early in the year and installed in a single case in Stanley Field Hall. The area included covers a radius of fifty miles from the center of the city and practically all of the thirty-nine species known to occur there are shown. The larger species, as bears and deer, which are extinct in the area, are not shown. Each species has an individual setting with sufficient accessories to give it an attractive appearance and to indicate or at least suggest some of its habits and locality preferences. The case is of especial interest to local naturalists, and it is hoped will be of value in connection with the Museum's work with school children.

The Olympic Elk group, preparation of which has been subject to numerous interruptions, was advanced during the year, but final installation was not accomplished. Space for it was assigned at the south end of Pullman Hall and all preliminary construction completed.

Rearrangement of the systematic exhibit of mammals in Hall 15 was continued and thirteen cases there were reinstalled and cases of old style design eliminated. A number of single mammals were mounted, only a part of which were installed. Among them were specimens of the Brazilian Red Wolf, the Chinchilla, and the Argentine Viscacha obtained by recent South American expeditions. Awaiting installation are an Alaskan White Sheep, a Chilean Huemul, Ouakari Monkey, Tibetan Gazelle, Peruvian Tayra, and several smaller mammals.

Two cases of North American birds were installed during the year as a beginning of the proposed revision of the systematic exhibit of birds in Hall 21. The first of these was a case of raptorial birds, including birds



TROPICAL VEGETATION ON FORMERLY CLEARED GROUND ON THE DEMERARA RIVER.

THE MUSEUM'S LATE COLLECTOR, A. C. FERRAUD, IN THE FOREGROUND.

CAPTAIN MARSHALL FIELD EXPEDITION.

of this class previously exhibited temporarily in Stanley Field Hall. All the important species of eagles, hawks, and falcons found in North America north of Mexico are shown. Species occurring in the state of Illinois have a distinctive mark on the label and thus the previous system of separate exhibits of North American and Illinois birds is rendered unnecessary. Shelves are dispensed with and the birds are disposed on natural perches affording opportunity for pleasing arrangement, proper association of related species and great variety of posing. A second case of this series was installed late in the year, containing on one side the North American owls (23 specimens) and on the other the woodpeckers (48 specimens). In a few instances, not only the distinct species but some of the more important geographic races or subspecies are shown. Although the exhibit is a systematic one, it is possible also to introduce occasional features illustrating particular habits of individual species. A notable example of this sort is found on the screen of woodpeckers, where the California Woodpecker is mounted on a section of a telegraph pole, illustrating the well known but very interesting habit which this bird has of storing acorns in standing trees or poles. The section of pole, thickly studded with acorns, was collected and presented by Mr. R. H. Tuttle of San Bernardino at the instance of Mr. Edward E. Ayer.

The group of American White Pelicans, which was one of the very few exhibits suffering some damage during removal from the old Museum building, was brought again to first class condition by substituting for the old ones three newly mounted pelicans especially collected for the purpose by Taxidermist Hine on an expedition to Canada earlier in the year.

Installation of reptiles was confined mainly to one large group of American crocodiles. Material for this group was obtained by the Captain Marshall Field Expedition to Honduras in 1923. Full size plaster casts of the freshly killed animals were made in the field and safely transported to the Museum where they were used in making the celluloid reproductions for the group. The crocodiles are the largest animals to which the celluloid process has been applied, and it is gratifying to find it quite as effective and successful as with smaller ones. The Anaconda, previously exhibited with other material, was reinstalled to occupy an entire case with suitable accessories. A number of small reptiles were prepared in celluloid and await installation. Further experiments were conducted in celluloid work and a number of difficulties have been cleared up, especially in the technique of preparing specimens of very small size.

With the exception of one special undersea group, very few fishes were installed during 1925, owing to the lack of suitable cases. A small

collection of Pacific food and game fishes which had been exhibited temporarily in Stanley Field Hall was removed and placed in storage for incorporation with the systematic exhibit at a later time. Preparation of fishes continued with some interruptions and about fifty completed specimens are on hand with many others in various stages of completion, altogether comprising a sufficient number to occupy at least four entire cases.

The undersea group shows mainly sharks and rays and is installed in a built-in case with artificial light and painted background. It represents a scene as it might be viewed from a porthole of a submarine near shore and near bottom in the Gulf of Mexico. The material for it was collected by the Captain Marshall Field Expedition to Texas in 1924. The species shown are as follows: A small shark (*Carcharinus limbatus*) commonly called "maneater" and much feared by local fishermen; a Cow-nosed Ray (*Rhinoptera lobata*), a species with heavily armored jaws for crushing shellfish; a Leopard Ray (*Aetobatus narinari*) handsomely spotted black and white; a Sting Ray (*Dasybatus hastatus*), having a large barbed spine at the base of the tail; a Sawfish (*Pristis pectinatus*) about ten feet in length; and an Electric Ray (*Narcine brasiliensis*), noted for the powerful electric shock it is able to give.

There were no new installations of osteological material, but there was considerable rearrangement. Six cases, released from service for mammals in Hall 15, were utilized to bring under cover a number of large skeletons that had previously been exposed on open bases.

A special exhibit was maintained in Stanley Field Hall throughout most of the year, showing the route of the James Simpson-Roosevelt Expedition, and characteristic animals of the region traversed. It included a relief map on which the progress of the expedition was indicated by small flags placed as despatches came in. Paintings or published figures of mammals, birds, reptiles, and fishes likely to be obtained were also shown.

Congestion in the reference collections of mammals and birds was partly relieved by the acquisition of eight units of a new and improved style of storage case. This has a metal exterior and interior fittings of wood and composition. It is equipped with swinging doors having a special locking device, rendering it practically airtight and mothproof. It is finished in color and is convenient, practical, and attractive in appearance. The need for further cases of this type continues in order to make it possible to assemble specimens from their miscellaneous places of storage and place them in convenient order for reference and proper care.

During the year the last of the reptiles and amphibians were removed from the fish storage room, leaving shelf room for a better arrangement of fishes. A beginning was made on this new arrangement and some work was also done on the very important task of removing specimens from unserviceable cork-stoppered or glass-stoppered bottles and putting them in safer containers of the fruit-jar type.

Routine work in skull cleaning, skin dressing, and preparation of material received from expeditions proceeded as usual. Some 2,000 insects were pinned and labeled and four cases of shells were removed from exhibition and placed in storage.

An important event of the year was the receipt of the Barnes collection of North American birds' eggs. The collection was deposited in the Museum by Judge R. M. Barnes, who holds the position of Assistant Curator of Oology in the Department of Zoology, and who will share responsibility for its care and growth during his lifetime, after which it is agreed that full title to it shall pass to the Museum. The collection contains 38,731 eggs and is one of the largest and most valuable collections of the kind ever formed. Besides specimens obtained by Judge Barnes himself during forty years of activity, it contains various collections of others which were purchased entire. Among these are collections of Messrs. Philo W. Smith, Lee W. Chambers, J. W. Preston, P. B. Peabody, George Noble, Fred W. Beers, and Richard Christ. The collection is arranged in series of sets covering variations and peculiarities of interest to oologists. It contains, approximately, four hundred such series regarded as complete and about five hundred uncompleted ones. Practically every species of North American bird is represented, including some very rare or extinct ones, the eggs of which are now virtually unobtainable.

THE N. W. HARRIS PUBLIC SCHOOL EXTENSION

Progress in the N. W. Harris Extension Department during the past year has been more than ordinarily satisfactory. Seventy-eight cases were added to the number available for loaning to the schools of Chicago. Improvements were made in the methods of production used in several of these cases. The attractiveness and educational value of cases exhibiting reproductions of wild flowers of the Chicago area were increased by the use as backgrounds of enlarged and colored photographs showing the natural habitat of the flowers reproduced. The total number of cases that have been prepared for school use is 908. Of this number 706 are in daily circulation, cases now being regularly loaned to 353 schools in Chicago. Each pupil of the conservatively estimated half-million

attending these combined schools has the opportunity every school-day of studying two of the cases; and during the school-year, thirty-six cases are placed at his disposal. A delivery truck visits each school eighteen times during the year and leaves, on each visit, two cases. These are either taken from class room to class room or are displayed in the main hall of the school.

Requests to receive scheduled deliveries of cases were received from and granted to the following: Union League Foundation for Boys' Clubs, the Chicago University Settlement, Pullman Free School of Manual Training, and the Guardian Angel School conducted by the Sisters of Notre Dame. Cases were loaned for short periods to the following: Woodlawn, Ogden Park and Henry E. Legler branches of the Chicago Public Library; Y. M. C. A. School; Moreland Continuation School; Municipal Pier Exhibit; Chicago Art Institute; Annual Nature Exhibit, Illinois Federation of Women's Clubs; Chicago Chapter, Wild Flowers Preservation Society of America; Swift & Company; International Life Stock Show; and Sprague, Warner & Company. Acknowledgement is made to the A. I. Root Company for their assistance in the preparation of a case showing various phases in the life of the honey-bee. This case was exhibited under their auspices at a meeting of the Wisconsin Bee-keepers' Association, and, later, in the Entomological Section of the Annual Meeting, American Association for the Advancement of Science.

GUIDE-LECTURERS

Classes from public, parochial and private schools, clubs, conventions, and other groups were given free guide-lecture service throughout the year. In conducted tours for classes from the public schools, a strict adherence to the subjects studied in each grade was maintained. This policy, coupled with the cooperation of school officials, nearly tripled the number of school classes receiving instruction. Three hundred forty-eight informal lectures were given in the exhibition halls to classes totalling 11,821 children. A Vacation Course of Instruction for children recommended by Members of the Museum was carried on during the summer months. Thirty-six classes, with an attendance of 251 children, met during the course for study of the Museum collections. Clubs and conventions to the number of 120 with an attendance of 2,167 were conducted on general tours of the Institution; and nine lectures illustrated by stereopticon were given to 342 members of women's clubs. Public tours were offered on announced days and hours; and 176 such tours were attended by 693 individuals. The total for guide-lecture service in the Museum was: 653 lectures with an attendance of 15,023 individuals.

In January of 1925, tentative plans were made for widening the scope of the guide-lecture service by the inauguration of Field Museum Extension Lectures in the Public Schools. The addition of a third guide-lecturer to the department in March gave fresh impetus to the plan; but upon advice of school officials, the beginning of the work was postponed until the school year 1925-1926. It was the desire of the Museum to keep these lectures related as closely as possible to the regular school work by selecting their subjects from the school curriculum. The lectures were illustrated by lantern slides and were given in either school auditoriums or class rooms, depending upon the choice of the principal. In November and December, 91 lectures were given to audiences totalling 20,717 children. These figures, combined with the totals for conducted tours, general lectures, special lectures, entertainments and Americanization programs, make a total of 105,066 individuals who received direct instruction from the Museum in the year 1925.

ART RESEARCH CLASSES

During the year, the classes in research from the School of the Art Institute of Chicago visited the Museum daily. The enrollment of this year is slightly in excess of that of preceding years. Interest in the work is constantly growing, and the results of study in the Museum is to be seen in the work of other classes at the Art Institute.

Some of the work done in Mr. Wilkins' classes included the productions of posters, a few of which were used by the Museum in the Rapid Transit Series of advertisements and in the schools of Chicago.

The portfolio, "Research Design in Nature," which was published during 1925 by Mr. Wilkins from Field Museum Press, was compiled from the work of his classes at the Museum. It contains approximately 220 plates, showing about 3,000 designs based directly on Museum exhibits, and is finding a diversified use in art, education and industry.

PUBLICITY

GENERAL.—During the past year the Publicity work was enlarged, international as well as local and national mediums being used. Necessarily the emphasis lay upon local efforts, the primary aim of the work during the year being to arouse a desire on the part of the general public to visit the Museum.

In addition to attempting to increase the use of the Museum by the public through arousing an interest in its exhibits and activities, an

active campaign has been maintained to enable the stranger to find his way to the Museum.

Various advertising mediums have been placed at the disposal of the Museum without charge. This occasion is taken to again extend the thanks of the Institution to the givers of this space.

PRESS PUBLICITY.—An average of five newspaper notices were published each week in the local papers, some of these notices appearing in all or several of the six Chicago newspapers. Of the two hundred and fifty news stories, ninety-three were published nationally and twenty-one received international circulation. The aim of these stories was to inform the public regarding the Museum's important exhibits and its research, expeditions, aims, accomplishments and general activities.

During the year, news, feature and pictorial publicity was secured through the following distribution services: Associated Press, United Press, International News, Universal Service, Consolidated Press, Underwood & Underwood, International Photo Service, Kadel & Herbert, Pacific and Atlantic, Photograms, Wide World, Central Press, NEA Service, Havas, Agence Radio, Reuters, Rosta, Australian Press, etc.

Illustrated articles were also printed in several leading magazines concerning Museum projects and activities.

ADVERTISING.—A series of six color posters, representing Museum exhibits, was displayed in the Elevated Line Stations. Placards announcing the lecture courses were also displayed by the Rapid Transit Company in the spring and autumn. During the same seasons, the Surface Lines printed, at their own expense, overhead posters advertising the Museum. The Illinois Central Railroad, through the courtesy of the Inland Advertising Company, continued to give advertising space in its suburban trains to the Museum.

Two color posters were distributed to libraries, schools and other institutions advertising the spring and autumn lecture courses for adults and similar distribution was given to two posters advertising children's courses. A series of three color posters was used to advertise the Americanization Programs, distribution of this series being by mail and through the assistance of the Citizenship Committee of the Chicago Council of Social Agencies.

Through the courtesy of the Clyde W. Riley Advertising System, the Museum used during the year a page in each program used by the eighteen theatres whose programs are controlled by the System. A page advertisement also appeared in each issue of the Auditorium Theater

program during the 1925 season of the Chicago Civic Opera, this space being secured through the interest of President Stanley Field. An advertisement of the Museum appeared in *This Week in Chicago*, issue of May 3-9, 1925, through the courtesy of the publisher.

DIRECTION FOLDERS.—A form letter has been sent to an average of fifty convention chairmen a month during the past year, offering them a supply of folders on "How to Reach Field Museum." A number of conventions have been supplied in this manner with the folders. This folder also received wide distribution through the courtesy of local hotels, information booths and railroad stations.

DIVISION OF PRINTING

The Division of Printing produced an excess of 2,000 exhibition labels and 150,000 other impressions over the total for 1924. The following publications were printed and bound during the year by this section:

| | |
|------------------------------------|--------|
| Regular publication series..... | 15,714 |
| Design Series..... | 1,500 |
| Leaflet Series..... | 42,048 |
| Technique Series..... | 2,200 |
| Membership Brochure..... | 7,236 |
| Museum Publication Price List..... | 100 |
| Total..... | 68,798 |

The number of labels and other impressions printed follows:

| | Exhibition Labels | Other Impressions |
|------------------------------------|----------------------|----------------------|
| Anthropology..... | 5,100 | 8,490 |
| Botany..... | 1,030 | 19,785 |
| Geology..... | 867 | 100 |
| Zoology..... | 432 | 6,953 |
| Harris Extension..... | 850 | 1,790 |
| General..... | | 421,887 |
| Geographic Society of Chicago..... | | 72,305 |
| Total..... | 8,279 | 531,310 |

One colored plate for the Catalogue of Birds of the Americas, one colored plate of Mr. Ayer for the Catalogue of the Ornithological Library, and eight colored maps for the Early Geological History of Chicago required 24,000 impressions.

Among the exhibition labels printed, those produced on buff stock are worthy of mention as they have proved unusually legible in the artificially lighted halls. No. 3 in the Design Series is a good example of the cooperation which exists between the divisions of Photography, Photogravure and Printing. It consists of a portfolio with thirty-eight photogravure plates and four pages of text.

DIVISION OF PHOTOGRAPHY AND ILLUSTRATION

PHOTOGRAPHY.—The total number of operations, lantern slides, prints and negatives made by this division during the year was 11,903. Two hundred and sixty-nine negatives were made for the portfolio, Research Design in Nature. The following tabulation is a summary of the work performed:

| | Number of Lantern Slides Made | Number of Negatives Made | Number of Prints Made | Number of Negatives Developed for Field Expeditions |
|-----------------------|---|-----------------------------------|--------------------------------|---|
| Anthropology..... | 271 | 281 | 1,350 | ... |
| Botany..... | ... | 81 | 1,789 | 6 |
| Geology..... | 198 | 137 | 960 | ... |
| Zoology..... | 2 | 130 | 1,458 | 84 |
| Harris Extension..... | ... | 65 | 153 | 66 |
| General..... | 44 | 397 | 1,575 | ... |
| Gift..... | 2 | 2 | 96 | ... |
| Sale..... | 4 | 4 | 43 | ... |
| Public Schools..... | 1,143 | 143 | 460 | ... |
| Photogravure..... | ... | 309 | 578 | ... |
| Totals..... | 1,664 | 1,529 | 8,564 | 146 |

PHOTOGRAVURE.—The number of photogravures made during the year exceeded the total for 1924 by more than 140,000. The following statement shows the work of this division during the year:

| | No. of Prints |
|---|---------------|
| Anthropology Publications..... | 146,000 |
| Botany Publications..... | 6,000 |
| Geology Publications..... | 32,300 |
| Report of the Director..... | 56,000 |
| Post Cards..... | 14,764 |
| Post Cards, Special..... | 1,000 |
| New Picture Post Card Album..... | 41,500 |
| Membership Certificates..... | 1,000 |
| Research Design in Nature, portfolio..... | 202,000 |
| Total..... | 504,564 |



A CACTUS FROM BRITISH GUIANA.
(*Cylindropuntia*).

IN ONE OF THE EXPANDED FLOWERS IS A BAT (*Myotis*) THAT VISITS THIS CACTUS.
Reproduced for the Hall of Plant Life.
STANLEY FIELD GUIANA EXPEDITION.

ARTIST.—The following list is a comprehensive statement of the work performed by this division during the year:

ANTHROPOLOGY

- 67 pen drawings of Chinese pottery.
- 16 pen drawings of Chinese pictographs.
- 77 lantern slides colored.
- 48 negatives of Chinese baskets blocked.
- 2 photographs of crickets retouched.
- 6 negatives numbered.
- 6 plates (67 figures) photographs of excavations at Kiah remounted, lettered and retouched.
- 6 drawings of Polynesian designs.

BOTANY

(Plant reproduction)

- Fruits and bracts of *Borassus* colored.
- 180 petals of crab-apple flowers colored.

GEOLOGY

- Scutes of fossil *Glyptodon* colored.
- 3 casts of meteorites colored.
- 14 pen drawings for leaflet.
- 4 negatives blocked.
- 1 map drawing.
- 3 drawings lettered.
- 3 photographs retouched.
- 81 lantern slides colored.

ZOOLOGY

- 14 drawings of coral snake patterns.
- 1 map of S. America drawn.
- 1 map of Africa retouched.
- 2 photographs of mammals retouched. Numerals on photographs of skulls.

PHOTOGRAPHER

- 41 photographs retouched.
- 50 negatives blocked.

GENERAL

- 351 lantern slides colored.
- 5 negatives blocked.
- Cover design and panel decorations for Membership Brochure.

PUBLICITY

- 2 drawings for posters.

PRINTER

- Cuts repaired.
- Drawing of word "Album."

PHOTOGRAPHY

- Registration marks placed on photographs.
- Letters on negatives retouched.

ATTENDANCE

The total attendance for the year is 722,950, which is an increase of 79,491 over the previous year. An analysis of the admissions is made elsewhere in this report.

Herewith are also submitted financial statements, lists of accessions, names of members, etc.

D. C. DAVIES, Director.

ATTENDANCE STATISTICS

FROM JANUARY 1, 1923 TO DECEMBER 31, 1923

| | |
|-----------------------------|---------|
| Total Attendance..... | 722,950 |
| Paid Attendance..... | 104,419 |
| Free Admission on Pay Days: | |
| Students..... | 11,884 |
| School Children..... | 34,659 |
| Teachers..... | 1,397 |
| Members..... | 760 |
| Admissions on Free Days: | |
| Thursdays (53)..... | 83,109 |
| Saturdays (52)..... | 165,768 |
| Sundays (52)..... | 320,954 |

| | |
|--|------------|
| Highest Attendance on any day (August 30, 1923)..... | 18,889 |
| Lowest Attendance on any day (December 21, 1923)..... | 133 |
| Highest Paid Attendance on any day (September 7, 1923).... | 4,174 |
| Average Daily Admissions (365 days)..... | 1,980 |
| Average Paid Admissions (208 days)..... | 502 |
| Number of Guides sold..... | 9,787 |
| Number of Articles checked..... | 17,592 |
| Number of Picture Post Cards sold..... | 95,643 |
| Sales of Publications, Leaflets, Handbooks and Photographs.. | \$2,357.37 |

GENERAL FUND

STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS

At December 31, 1925

Balance, December 31, 1924.....\$43,560.53

RECEIPTS

| | | |
|---|----------------|----------------|
| Income—Endowment, General, Miscellaneous and door receipts..... | \$ 353,892.03 | |
| South Park Commissioners..... | 110,983.64 | |
| Sundry Receipts..... | 9,004.83 | |
| Memberships..... | 72,670.00 | |
| Contributions..... | 390,415.12 | |
| Sales of Securities..... | 503,203.06 | |
| | \$1,240,168.68 | |
| | | \$1,283,729.21 |

DISBURSEMENTS

| | | |
|--------------------------------------|----------------|--------------|
| Operating Expenses..... | \$ 441,940.36 | |
| Expeditions..... | 60,477.30 | |
| Collections Purchased..... | 80,912.81 | |
| Furniture and Fixtures..... | 44,416.11 | |
| Securities Purchased..... | 611,522.16 | |
| Annuities on Contingent Gifts..... | 15,663.00 | |
| | \$1,254,933.74 | |
| Transferred to Sinking Fund..... | 12,900.00 | |
| | \$1,267,833.74 | |
| Cash Balance, December 31, 1925..... | | \$ 15,895.47 |

THE N. W. HARRIS PUBLIC SCHOOL EXTENSION

Statement of Income and Expenses for the Year 1925

| | |
|--|--------------|
| Interest and Dividends on Investments..... | \$ 22,408.44 |
| Operating Expenses..... | 21,179.88 |
| Balance transferred to Surplus..... | \$ 1,228.56 |

STANLEY FIELD PLANT REPRODUCTION FUND

Statement of Income and Expenses for the Year 1925

| | |
|---|--------------|
| Balance December 31, 1924..... | \$ 66.92 |
| Contributions by Stanley Field during 1925..... | 14,300.00 |
| Operating Expenses 1925..... | \$ 14,366.92 |
| Balance December 31, 1925..... | 13,439.36 |
| | \$ 927.56 |

STANLEY FIELD MUSEUM EMPLOYEES PENSION FUND

Statement of Income and Expenses for the Year 1925

| | |
|---|--------------|
| Interest and Dividends on Investments..... | \$ 11,856.42 |
| Profit on sale of Securities..... | 915.25 |
| Pensions and Group Insurance Premiums for 1925..... | \$ 12,771.67 |
| Balance added to Pension Fund..... | 10,668.13 |
| | \$ 2,105.54 |

ACCESSIONS

DEPARTMENT OF ANTHROPOLOGY

ADAMS, MRS. JOSEPH, Chicago.

- 1 portrait head carved from stone, Roman period; 1 cast silver figure, Inca period—Egypt and Peru (gift).

ADAMS, MR. JOSEPH, Chicago.

- 2 barbed iron spears—Sudan, Central Africa (gift).

ARONSON, HENRY A., Chicago.

- 1 beaded bag of Central Algonkin type—Chippewa, Lac du Flambeau, Wisconsin (gift).

AYER, EDWARD E., Chicago.

- 1 large pewter ewer, with embossed Pan's head and floral designs—Germany (gift).

- 2 pewter objects: 1 lacquered tea-jar and 1 pair pewter tea-jars with designs inlaid in brass—Japan and China (gift).

- 1 water tobacco-pipe of white copper—China (gift).

- 2 pewter objects: 1 pair wine-pots in form of peaches and 1 decorated box—China (gift).

- 1 pewter wine-pot, 18th century—Japan (gift).

- 11 pewter objects: 4 pair of candlesticks, 1 tea-pot, 1 pair of tea-canisters, 1 covered dish, 1 set of two figures on base, 1 box with two compartments, 1 boat, 1 figure of phoenix—China (gift).

- 11 pewter objects: 2 pair of candlesticks and 9 tea-pots—China (gift).

- 4 pewter objects: 1 censer in shape of crane, 1 in shape of fish, 1 dish, 1 tea-jar inlaid with brass designs—China (gift).

- 9 pewter objects: 3 tea-pots and 3 trays inlaid with designs in brass—China (gift).

- 2 pewter objects: 1 pair of wine-cups and 1 baptismal font—China and Germany (gift).

- 10 pewter objects: 1 decorated plate, 1 tureen, 7 spoons, 1 ladle—Italy and Germany (gift).

- 3 pewter objects: 1 tray, 1 seal-box, 1 money-box—China (gift).

- 10 pewter objects: 1 covered jar, 2 coffee-pots, 2 tankards, 2 plates, 2 measuring cups, 1 porringer—China, England, Germany and United States (gift).

- 7 pewter objects: 1 tea-jar lacquered in gold and red, 1 tea-jar inlaid with brass, 2 bowls, and 1 covered jar—Japan and China (gift).

- 2 copper trays inlaid with floral designs in pewter—Japan (gift).

- 10 feather head-dresses—Karak, California (gift).

AYER, MRS. EDWARD E., Chicago.

- 5 pewter objects: decanter and set of four glasses, trimmed with pewter—Germany (gift).

BABCOCK, A. B., Chicago.

- 5 costumed dolls representing emperor and empress, prince, princess and state minister, for dolls' festival—Japan (gift).

BERNICE-PAUAAHI BISHOP MUSEUM, Honolulu, Hawaiian Islands.

- 128 objects: stone work, tapa, wooden bowls, etc. from Hawaii; and 1 wooden image, 2 bowls, 1 pounder, and 1 adze from Marquesas Islands—Hawaiian and Marquesas Islands (exchange).

BUCKINGHAM, MISS KATE S., Chicago.

- 3 ornamented tomb-bricks of the Han period—China (gift).

BUTLER, JULIUS W., Chicago.

- 2 pairs of moccasins—Shoshoni and Algonkin, Eastern Woodland Area and Montana (gift).

CHANDLER, M. G., Chicago.

- 3 rock medicines, 2 war medicines,
1 horse-stealing medicine, 1 tobacco
medicine, 1 medicine pipe,
1 medicine—Crow and Cheyenne,
Montana (exchange).

CHRISTMAN, GEORGE H., Watertown, New York.

- 1 prehistoric stone chisel—Chaumont,
Watertown, New York (gift).

COALE, HENRY K., Highland Park, Illinois.

- 1 prehistoric flint spear-head—Highland Park, Illinois (gift).

CORY, CHARLES B., JR., Chicago.

- 1 mat woven from ivory threads—Chittagong, Bengal, India (exchange).

CORY, MRS. CHARLES B., Chicago.

- 13 objects: 1 woman's skirt, 2 waists,
1 man's shirt and 1 coat, 1 racket
with deerskin ball, 1 wooden
soup-ladle, 1 beaded bandolier,
3 pairs of moccasins, 1 piece of
buckskin—Seminole, Florida; 1
leather apron—Nubia, Africa
(gift).

EGAN, W. C., EGANDALE, Highland Park, Illinois.

- 1 Chinese jingal, 1 Japanese sword,
2 African spears—China, Japan,
and Africa (gift).

ERSKINE, ALFRED, New York, New York.

- 1 poncho of llama wool—Peru, South America (gift).

FIELD, J. C., Waukegan, Illinois.

- 1 cornet made of 18 pieces of cow's
horn from Peru, and 1 fur foot-
warmer from Bolivia—Huan-
cayo, Peru, and Bolivia, South
America (gift).

FIELD MUSEUM OF NATURAL HISTORY.

Collected by A. L. Kroeber.—Captain
Marshall Field Expedition to
Peru:

About 1,971 objects: mummy bundles, pottery, fabrics, spindles and weaving sticks, baskets, pouches, plant remains, skulls and skeletal material—Peru, South America.

Collected by Andre Bircher and James H. Breasted.—Stanley Field and Ernest R. Graham Fund:

747 objects: 1 granite statue of Senmut, 9 bronze figures, 1 bronze sistrum, 154 alabaster bowls and vases, 580 textiles and dresses, and 2 Byzantine paintings on cloth—Egypt.

Collected by M. G. Chandler.—Endowment of Julius and Augusta N. Rosenwald.

320 objects: clothing, mats, bags, clubs, spoons, mortars, saddle, snow-shoes, flutes, pipes, and ceremonial objects—Potawatomi, Menominee, Winnebago, Mississippini, and Chippewa,—Iowa, Kansas, and Wisconsin.

Purchases:

Exhibit showing family tree of man consisting of background and 16 casts of skulls, from American Museum of Natural History, New York.

2 bark shirts and 1 pair of native rubber shoes—Province of Carabaya, Peru, South America, from W. H. Staver, New York, N. Y.

2 bronze sacrificial vessels in shape of animals—China, from William E. Hague, Chicago.

2 carved wooden clubs—New Zealand, from Ralph Linton, Chicago.

2 ornamented Karen bronze drums—Cheng Mai, Lao Country, Siam, from Dr. Joseph F. Rock, Washington, D. C.

1,950 objects: 3 costumed figures, carved wooden door frames, images, masks and stools, beaded work, ivory, jewelry, musical instruments, bells, pipes, bronze castings, swords, spears, guns, bows, crossbows, shields, daggers, axes, quivers, tools, nets, etc.—Cameroon, West Africa, from Jan Kleykamp, New York.

99 objects: clothing, weapons and implements—Copper Eskimo, Coronation Gulf, Northwest Territories, Canada, from John G. Worth, Philadelphia, Pennsylvania.

FIELD MUSEUM-OXFORD UNIVERSITY JOINT EXPEDITION (Captain Marshall Field Fund).

- 723 objects: 362 pieces of pottery, 59 stone implements, 8 shell implements, 12 bone implements, 35 seals, 205 metal objects, 41 beads, 3 ostrich-egg cups—Kish, Mesopotamia.

FIELD, STANLEY; PATTEN, HENRY J.; PIKE, CHARLES B., Chicago.

- 361 miscellaneous archaeological and ethnological objects—Egypt, Greece, Rome, South America, Mexico, United States, Australia, South Sea Islands, Philippines, India, and Europe (gift).

FORD, MRS. VERNON, Kansas City, Missouri.

- 1 decorated red pottery goblet—Inca, Cuzco, Peru, South America (gift).

FROST, MRS. E. B., Williams Bay, Wisconsin.

- 1 mummified head—Egypt, Africa (gift).

GILMER, DR. THOMAS L., Chicago.

- 1 woman's tobacco-pipe of pyrite—Banff, British Columbia, Canada (gift).

HARRIS, HARRY, Richmond, Virginia.

- String of 56 old colonial trade-beads—Penn Farm near Leedstown, Westmoreland County, Virginia (exchange).

HUBBARD, J. H., Chicago.

- 1 prehistoric grooved axe—Rogers Park, Chicago, Illinois (gift).

HUDSON, W. L., Chicago.

- 1 beaded pipe-bag with porcupine-quill fringes—Sioux, United States (gift).

HUGHES, THOMAS S., Chicago.

- Framed oil-painting by Andrew McCallum "The Rock Temple at Abou Simbel, Egypt," painted in 1874 (gift).

- 2 curved wooden images—China and Burma (gift).

JOHNSON, H. L., Clarksville, Tennessee.

- 19 objects: 2 discoidal, 3 bird-stones, 1 gorget, 1 flint gouge, 3 flint knives, 2 figures of frogs, 2 points, 2 tobacco-pipes—Tennessee, Kentucky, Indiana, North Carolina, California, Ohio, New York, Alaska, and Denmark (exchange).

KELLOGG, GERTRUDE E., Wheaton, Illinois.

- 3 clay figures of actors and 1 pen-rack—Fen-chou, Shansi Province, China (gift).

KREIDER, NOBLE, Goshen, Indiana.

- 1 silex spear-head, Aurignacian period—La Ferrassie, France (gift).

KROHN, DR. W. O., Chicago.

- 143 objects: spears, blow-pipe, swords, shields, costumes, mats, ornaments, masks, musical instruments, games, toys, and miscellaneous—Dayak, Borneo, Dutch East Indies (gift).

LARMER, MRS. WILLIAM, Chicago.

- 4 pieces of decorated tapa cloth—Samoa, Polynesia (gift).

LINTON, RALPH, Chicago.

- 3 shell necklaces—Papeete, Tahiti (gift).

LOGAN MUSEUM OF BELOIT COLLEGE, Beloit, Wisconsin.

- 285 objects: 49 copper implements, 64 chipped stone implements, 59 grooved stone axes, Wisconsin; 47 stone celts, United States; 54 stone implements, Denmark; 1 bone anvil, Mousterian, France; 1 pottery vase, Chancay, Peru; 1 pottery vase, Yuma, California; 1 adze, Klamath, California; 1 mat dress, Marshall Islands; 1 bone necklace and 1 shark-tooth spear, Gilbert Islands; 1 barbed weapon, New Guinea; 2 spears, Kikuyu, Africa; 1 iron axe, East Africa; 1 hammerstone, South Africa—Yuma and Klamath, Wisconsin and California, United States; Denmark; Mousterian, France; Chancay, Peru; Marshall Islands; Gilbert Islands; New Guinea; Africa (exchange).

MAERTIN, MRS. H., Chicago.

- 1 pewter spoon (heirloom of Henry Gross family)—Palatinate, Bavaria, Germany (gift).

MANIERRE, GEORGE (deceased), Chicago.

- 281 objects: 57 tobacco pipes, North America, Mexico and Japan; 73 pieces of prehistoric pottery and stone implements, North America; 115 chipped stone implements, Illinois; 3 pieces of pottery, Mississippi Valley; 20 baskets, bow, horn spoons, masks, knife, etc., California, Plains Indians, and Northwest Coast; 6 obsidian flakes, Mexico; 2 pieces of pottery, Chiriqui, Panama; 1 alabaster jar, 1 ushebt, Egypt; 1 boomerang, Australia; 1 carved ivory figure, Japan; 1 enameled cup, Russia—North America, Mexico, Panama, Australia, Japan, Egypt, and Russia (gift).

MCARTHUR, MRS. R. J., San Pedro, California.

- 2 prehistoric stone dishes—San Nicolas, Santa Barbara Islands, California (gift).

MEEKER, MRS. ARTHUR, Chicago.

- 1 silk embroidered hanging—China (gift).

MICHALEK, MRS. FLORENCE, Chicago Heights, Illinois.

- 1 Vicuna rug—Peru, South America (gift).

MITCHELL, JOHN J., Chicago.

- 160 carved rhinoceros-horn and buffalo-horn cups—China (gift).

NICHOLSON, GRACE, Pasadena, California.

- 1 buckskin skirt ornamented with shells, and apron of Karok woman—Northwest California (gift).

OHIO STATE MUSEUM, Columbus, Ohio.

- 369 objects: celts, mica, and obsidian specimens, and 19 casts of Hopewell Mound specimens—Hopewell and other Mounds of Ohio (exchange).

O'KEEFE, MRS. DENNIS D., Chicago.

- 1 dancing costume of Hibiscus fibers Tahiti; 3 pieces of tapa cloth stamped with designs, Fiji and Samoa—Papeete, Tahiti; Suva, Fiji; Pagopago and Apia, Samoa (gift).

PATTERSON, LIEUT.-COL. J. H., London, England.

- 54 inscribed clay tablets—Babylon, Mesopotamia (gift).

REED, MISS KATHERINE, Galesburg, Illinois.

- 2 embroidered shawls—Kashmir, India (gift).

RITTER, DR. THOMAS B. (deceased), Chicago.

- 3 objects: 1 pottery jar, 1 pottery bowl, and 1 tobacco-pipe—Catawba Indians, North Carolina (gift).

SARGENT, HOMER E., Pasadena, California.

- 1 Saltillo serape decorated with geometric designs—Saltillo, Coahuila, Mexico (gift).
- 3 reproductions of copper axe, spear-head, and dagger—Aishihik tribe, Yukon Territory, Canada (gift).
- 1 pair of snow-shoes—Chippewa, United States (gift).
- 17 basket trays, 1 basket cradle, 2 Apache baskets, 9 California baskets—Hopi, Apache, Mission, Pomo, etc., Arizona and California (gift).

SWIFT, CHARLES H., Chicago.

- 24 ivory carvings—Japan; 1 miniature clay dish—Palestine (gift).

THOMPSON, EDWARD HERBERT, West Palmouth, Massachusetts.

- 2 large pearls found in the sepulchre of the High Priest—Maya, Chichen Itza, Yucatan, Mexico.

TILLOTSON, MRS. HOMER J., Los Angeles, California.

- 1 pewter chalice—England (gift).

WHEELER, H. E., Chicago.

- 1 prehistoric incised black pottery jar—Caddo Indian Burying Ground, Arkansas River, Arkansas (gift).



STUMP OF A FOSSIL TREE OF THE COAL PERIOD.

ZEIGLER MINE NO. 1, ZEIGLER, ILLINOIS.

— GIFT OF MR. WALTER G. ZOLLER.

One-twelfth actual size.

WILDSCHUT, W., Billings, Montana.
1 Crow rock medicine—Montana (exchange).

77 medicine bundles and baskets—Crow and Cheyenne, and Bannock, Shoshoni Stock, Montana (exchange).

WILLSDEN, S. BLAKE, Chicago.
2 beaded bags—Ojibwa, Red Lake Indian Reservation, Beltrami County, Minnesota (gift).

WORTHINGTON, MR. C. M., Chicago
1 human skull with engraved designs—Borneo (gift).

WORTHINGTON, MR. AND MRS. C. M., Chicago.

43 objects: 1 shield, 1 mat, 4 men's hats, 3 women's head-dresses, 2 dish-covers, 3 baskets, 1 tobacco-pouch, 1 rice pounder, 2 krisers, 1 sword, 2 wooden knife models, 1 doll, 20 fruits and vegetables in wax, and 1 marionette figure—Dayak, Dutch Borneo and Java (gift).

ZULFER, PETER M., Chicago.
1 decorated serape in colors—Mexico.

DEPARTMENT OF BOTANY

ADAMS, J. A., Chicago, Illinois.
1 economic specimen (gift).

AUSTRALIAN GOVERNMENT, Commissioner of Queensland Court, Panama Pacific Exposition, San Francisco, 1915.

42 economic specimens (gift).

BENKE, H. C., Chicago, Illinois.
487 herbarium specimens (gift).
75 duplicate specimens (gift).
32 photographic prints (gift).
32 negatives (gift).

CHAMBERLAIN, PROF. C. J., University of Chicago.
68 herbarium specimens (gift).

CHURCHILL, JUDGE J. R., Dorchester, Mass.
1 herbarium specimen (gift).

CORN PRODUCTS REFINING CO., Argo, Illinois.
39 economic specimens (gift).

DAHLGREN, DR. B. E., Chicago, Illinois.
2 herbarium specimens (gift).

EPLING, DR. CARL, University of California, Southern Branch, Los Angeles, California.
24 photographs of herbarium specimens (gift).

FIELD MUSEUM OF NATURAL HISTORY.
Collected by G. S. Bryan (Capt. Marshall Field Expedition, Peru (1923):
18 herbarium specimens.

Collected by J. F. Macbride (Capt. Marshall Field Expedition, Peru 1923):

6 herbarium specimens.

Collected by A. C. Persaud (Capt. Marshall Field British Guiana Expedition 1924):

31 herbarium specimens.

132 duplicate specimens.

Stanley Field Laboratory:

34 models and reproductions of plants.

Transfer from Department of Anthropology:

3 economic specimens.

Transfer from Department of Zoology:

1 herbarium specimen.

Purchases:

2728 herbarium specimens—various localities.

1386 duplicate specimens—various localities.

1 economic specimen.

FLORIDA WOOD PRODUCTS CO., Jacksonville, Florida.
6 economic specimens (gift).

FRIESSER, JULIUS, Chicago, Illinois.
2 herbarium specimens (gift).

HALLBERG, J. P., Winegar, Wisconsin.
1 economic specimen (gift).

HUNGARIAN NATIONAL MUSEUM, Budapest, Hungary.
500 herbarium specimens (exchange).

JACZEWSKI, PROF. ARTHUR De, New York City.
151 herbarium specimens (exchange).

JOHNSON, A. S., Chicago, Illinois.
1 herbarium specimen (gift).

- MACBRIDE, J. P., Chicago, Illinois.
4 herbarium specimens (gift).
- MCCURRAGH, J., Portage Point, One-
lawna, Michigan.
1 herbarium specimen (gift).
- MISSOURI BOTANICAL GARDEN,
St. Louis, Missouri.
1 herbarium specimen (exchange).
- NETHERCOT, MRS. ANNIE, Chi-
cago, Illinois.
300 herbarium specimens (gift).
- PADILLA, DR. S. A., Salvador, Cen-
tral America.
1 herbarium specimen (gift).
- PALMER, J. H., Chicago, Illinois.
1 herbarium specimen (gift).
- PEATIE, D. C., Rosslyn, Virginia.
121 herbarium specimens (gift).
- POMONA COLLEGE, Department of
Botany, Claremont, California.
181 herbarium specimens (exchange).
- ROSE, DR. J. N., Washington, D. C.
1 herbarium specimen (gift).
- SHERFF, DR. E. E., Chicago, Illinois.
4 herbarium specimens (gift).
- STONE, R. R., Chicago, Illinois.
Collection of wood specimens (gift).
- TANNIN EXTRACT CO., Brooklyn,
New York.
2 economic specimens (gift).
- U. S. DEPARTMENT OF AGRICUL-
TURE, Washington, D. C.
142 herbarium specimens (exchange).
- U. S. NATIONAL MUSEUM, Wash-
ington, D. C.
1089 herbarium specimens (exchange).
- UNIVERSITY OF CALIFORNIA,
Southern Branch, Los Angeles,
California.
90 herbarium specimens (exchange).
- WEIS, S. W., Chicago, Illinois.
250 herbarium specimens (gift).
- WHEELER, H. E., Chicago, Illinois.
300 herbarium specimens (gift).
- WHETSTONE, DR. M. S., Minneap-
olis, Minn.
1 herbarium specimen (gift).

DEPARTMENT OF GEOLOGY

- AMERICAN MUSEUM OF NATU-
RAL HISTORY, New York
City, N. Y.
1 cast of nest of fossil dinosaur eggs
(gift).
2 casts of fossil skulls (gift).
4 casts of bones of fossil horse (gift).
- BANNER ROCK PRODUCTS CO.,
Alexandria, Indiana.
2 specimens rock wool (gift).
1 specimen rock cork (gift).
1 specimen argillaceous limestone
(gift).
1 specimen asphalt-paving joint
(gift).
- BLAIN, W. H., Chicago.
1 specimen coral—Nashville, Ten-
nessee (gift).
1 specimen geode—Nashville, Ten-
nessee (gift).
- BROWN, CHAS. P., South Bend, In-
diana.
6 specimens peat—South Bend, In-
diana (gift).
- BUTLER, JULIUS W., Chicago.
15 specimens ores and rocks—Forney,
Idaho (gift).
18 specimens minerals—Gallatin Co.,
Montana (gift).
- CARD, GEORGE W., New South
Wales.
1 specimen meteorite—New South
Wales (gift).
- CHALMERS, WILLIAM J., Chicago.
1 specimen ferriarite—Kamloops,
British Columbia (gift).
1 specimen monazite crystal—Bre-
jauba, Minas Geraes, Brazil
(gift).
6 specimens bismuth and pucherite—
Brejauba, Minas Geraes, Brazil,
(gift).
15 specimens minerals—Belgian
Congo, Madagascar and Sweden
(gift).
21 specimens minerals—Madagascar
(gift).
24 specimens minerals—Valmelanco,
Lanzada, Italy (gift).
41 specimens minerals—South Amer-
ica (gift).
- CHASE, V. H., Peoria, Illinois.
6 specimens cone-in-cone formation—
Peoria Co., Illinois (gift).
- CLEAVES, HOWARD H., Clarksburg,
Virginia.
9 specimens fossil brachiopods—Al-
bany Co., New York (gift).

COLORADO MUSEUM OF NATURAL HISTORY, Denver, Colo.

- 3 specimens meteorites—Johnstown, Colorado (exchange).

CONE, W. H., Berkeley, California.

- 1 specimen magnesite—Santa Clara Co., California (gift).

CORY, C. B., Chicago.

- 4 specimens hematite concretions—Pinehurst, North Carolina (gift).

CHRISTMAN, GEORGE, Watertown, New York.

- 2 specimens fossils—Chaumont, New York (gift).

CROWLEY, PATRICK, Chicago.

- 1 specimen copper ore—Butte, Montana (gift).

- 1 specimen pyrite—Butte, Montana (gift).

DAVIS, JOHN, Iowa City, Iowa.

- 1 specimen fossil sponge—Iowa City, Iowa (gift).

- 1 specimen fossil coral—Iowa City, Iowa (gift).

- 14 specimens fossil invertebrates—Coralville, Iowa City, Iowa (gift).

DOWNS, WM. R., Pal, Louisiana.

- 3 specimens fossil wood—Pal, Vernon Parish, Louisiana (gift).

ELLIOTT, JOHN G., Chicago.

- 1 specimen gold ore—Calaveras Co., California (gift).

FERRAZ, DR. JORGE B. DE ARAUJO, Rio de Janeiro, Brazil.

- 4 specimens minerals—Ouro Preto and Bahia (exchange).

- 1 specimen gold ore—Bahia, Brazil (exchange).

PERSMAN, PROF. ALEX., Leningrad, Russia.

- Print of a section of the Pallas meteorite (gift).

FIELD MUSEUM OF NATURAL HISTORY.

Collected by B. Laufer—Captain Marshall Field Expedition to China, 1923:

- 14 specimens fossil and modern horse teeth—China.

- 1 specimen part of trunk of fossil elephant—China.

Collected by E. S. Riggs, J. B. Abbott, G. F. Sternberg and Harold

Riggs—Captain Marshall Field Paleontological Expedition to Argentina:

- 50 boxes fossil vertebrates, invertebrates and plants—Argentina.

- 43 boxes fossil vertebrates and invertebrates—Argentina.

- 34 boxes fossil vertebrates—Bolivia.

- 1 specimen geode—Argentina.

Purchases:

- Fossil skeleton of *Equus scotti*—Rock Creek, Texas.

- 2 specimens *Mesobippus bairdi*—Harrison, Nebraska.

- 2 specimens opals—White Cliff, Australia.

- 3 cameos cut from lava.

- 3 casts of *Echippus*.

- 5 specimens blue and mauve, cut zircon—Siam and Ceylon.

- 10 restorations of extinct reptiles.

- 13 cut, semi-precious stones.

FIELD, STANLEY, HENRY J. PATTEN and CHARLES B. PIKE, Chicago.

- 5 specimens fossil plants (gift).

FORD, MRS. VERNON, Kansas City, Missouri.

- 1 specimen colored sand—Chile (gift).

FREDERICKS, F. G., Bessie, North Dakota.

- 16 specimens concretions, fossils and minerals—North Dakota (gift).

GOSSEL, PHILIP, Chicago.

- 2 specimens clays—Niland, near Death Valley, California (gift).

- 3 specimens miscellaneous minerals—Niland, near Death Valley, California (gift).

- 15 specimens concretions—Niland, near Death Valley, California (gift).

HALL, LEO G., Downer's Grove, Illinois.

- 3 specimens minerals—Colorado, Montana and Cornwall, England (gift).

- 11 specimens synthetic minerals (gift).

HARVARD UNIVERSITY, Cambridge, Massachusetts.

- 1 specimen meteorite—New Baltimore, Pennsylvania (exchange).

HOLMES, THOS. J., Chicago.

- 3 specimens fossil shells and wood—Midlothian, Illinois (gift).

- HUNTLEY, O. V., Riverdale, Illinois.
2 specimens mammoth bones—Lawrence Co., Illinois (gift).
- ILLINOIS CLAY PRODUCTS CO., Joliet, Illinois.
6 specimens clays, peat and briquettes—Goose Lake, Coal City, Illinois (gift).
- KAPING, HERMAN, Ingleside, Illinois.
Vertebra and rib of *Mastodon americanus*—Ingleside, Lake Co., Illinois (gift).
- KNOPP, E. B., Kirkland Lake, Ontario.
1 specimen tellurium (gift).
- LEAN, P. J., Calumet, Michigan.
4 specimens minerals—Calumet, Michigan (gift).
- LICEO DE COSTA RICA, San Jose, Costa Rica.
1 specimen basalt containing obsidian—Cebadilla, near Rio Grande, Costa Rica (gift).
- LINTON, DR. RALPH, Chicago.
1 specimen volcanic sand—St. Vincent Island (gift).
- MILLAR, AUSTIN Q., Murfreesboro, Arkansas.
11 specimens peridotite minerals—Pike Co., Arkansas (gift).
- MILLAR, HOWARD A., Murfreesboro, Arkansas.
13 specimens diamonds and its associated minerals—Pike Co., near Murfreesboro, Arkansas (gift).
- MITTAU, FELIX E., West Hartford, Connecticut.
10 specimens claystone concretions—Hartford, Connecticut (gift).
- MORONEY, JOHN J., Chicago.
1 specimen fire clay—Morton, Minnesota (gift).
- MORTON, JOY, Chicago.
1 fossil tooth—Fulton Co., Illinois (gift).
- NININGER, PROF. H. H., McPherson, Kansas.
1 specimen Carlton—Tucson meteorite—Tucson, Arizona (exchange).
- OZORA MARBLE QUARRIES CO., St. Louis, Missouri.
2 specimens Ozora marbles—Ozora, Missouri (gift).
- PAPER MILLS CO., THE, Chicago.
12 paraffined cups (gift).
- PERRY, MRS. MARY S., Chicago.
1 specimen colored limestone—Petoskey, Michigan (gift).
1 specimen obsidian—Obsidian Cliff, Yellowstone National Park, Montana (gift).
15 specimens fossil corals—Petoskey, Michigan (gift).
- PHILLIPS, R. L., Brazil, Indiana.
6 specimens minerals—Brazil, Indiana (gift).
- SALL MOUNTAIN CO., Chicago.
11 specimens asbestos products (gift).
- SALMEN, NAGIB, Baabda, Beyrouth, Syria.
1 specimen smoky quartz crystal—Theophilo Ottoni, Brazil (gift).
- TRISTAN, J. FID., San Jose de Costa Rica, Costa Rica.
2 specimens alunogen—Costa Rica, Central America (gift).
2 specimens shell marl—Costa Rica, Central America (gift).
- THURSTON, DR. FREDUS A., Chicago.
1 specimen gold ore showing free gold—Near Kenora, Ont. (gift).
- WALKER, DR. JAMES W., Chicago.
1 specimen fossil echinoid (gift).
- WENDLER, C., Geneva, Switzerland.
2 specimens meteorites—Olivenza, Badajoz, Spain (exchange).
- WHEELER, H. E., Chicago.
60 specimens minerals—Magnet Cove, Arkansas (gift).
- ZOLLER, WALTER G., Chicago.
1 specimen fossil tree of the Carboniferous Period—Zeigler Mines, Zeigler, Illinois (gift).

DEPARTMENT OF ZOOLOGY

- AMERICAN MUSEUM OF NATURAL HISTORY, New York City.
266 frogs and toads, 12 salamanders, 136 snakes, 377 lizards—China (exchange).
- AMMEN, MRS. W. J., Chicago.
1952 shells—Various localities (gift).
- AYER, EDWARD E., Chicago.
1 nudibranch mollusk—La Jolla, California (gift).

- BARBOUR, DR. THOMAS, Cambridge, Massachusetts.
2 coral snakes—Honduras (gift).
- BAYLIS, J., Chicago.
1 wasp—Chicago (gift).
- BERGSENG, E. STANLEY, Wisconsin.
2 snakes—Clark County, Wisconsin (gift).
- BIGELOW, H. A., Chicago.
1 West African palm civet—Belgian Congo, Africa (gift).
- BIRKHOLZ, H. G., La Porte, Indiana.
1 star-nosed mole—La Porte, Indiana (gift).
- BISHOP, DR. S. C., Albany, New York.
36 salamanders—Various localities (exchange).
- BRADLEY, H. E., Chicago.
1 flying lemur skin, 1 giant squirrel skull—Sumatra, East Indies (gift).
- BROOKS, MAJOR ALLAN, Okanagan Landing, B. C.
1 pigmy owl—Okanagan Landing, B. C. (gift).
- BRUNNER, FRANK, Flossmoor, Ill.
1 New York weasel—Flossmoor, Ill. (gift).
- BUSH, BENJAMIN O., Kalamazoo, Michigan.
1 American scoter—Kalamazoo, Michigan (gift).
- BUTLER, JULIUS W., Chicago.
6 mammal skulls—Salmon River, Idaho (gift).
- CARAWAY, B. M., Riverton, Wyoming.
1 mountain sheep—Near Riverton, Wyoming (gift).
- COALE, H. K., Highland Park, Illinois.
1 heron—Japan (gift).
1 heron—Congo (gift).
1 tanager—Paraguay (gift).
4 pine skins, 1 snow bunting—Lake County, Illinois (gift).
1 tree-purtridge—Formosa (gift).
- COLLINS, MAJOR A. M., Philadelphia, Pennsylvania.
240 butterflies, 3 moths—Belgian Congo, Africa (gift).
- CONOVER, H. B., Chicago.
40 mammals—Alaska (gift).
1 pied-billed grebe—Ceara, Brazil (gift).
2 gulls—Bolivia (gift).
- 1 Sabine gull, 1 parasitic jaeger—Alaska (gift).
2 birds—Italy (gift).
1 bird—Paraguay (gift).
- CORY, C. B. (deceased), Chicago.
4 gophers—Lake Geneva, Wisconsin (gift).
- DAHLGREN, DR. B. E., Chicago.
3167 wasps, ants, and nests—British Guiana (gift).
- DAVIS, WM. T., New Brighton, New York.
3 walking sticks—Maspeth, New York (gift).
- DAWSON, CHARLES W., Muskogee, Oklahoma.
3 turtles—Muskogee, Oklahoma (gift).
- DURY, CHARLES, Cincinnati, Ohio.
6 beetles—Cincinnati, Ohio (gift).
- ECKSTORM, MRS. F. H., Brewer, Maine.
1 Hoy's shrew—Brewer, Maine (gift).
- ERWIN, RICHARD P., Boise, Idaho.
1 salamander, 12 frogs, 14 lizards, 12 snakes—Idaho (exchange).
- FERRISS, JAMES H., Joliet, Illinois.
36 fishes—Southern Texas (gift).
- FIELD MUSEUM OF NATURAL HISTORY.
Collected by G. K. Cherrie (James Simpson-Roosevelt Asiatic Expedition):
95 birds, 3 eggs—India.
3 mice—Ladak, India.
4 hawks—Red Sea.
- Collected by J. Friesser and H. C. Holling (Capt. Marshall Field British Columbia Expedition):
7 mountain goats, 1 elk, 1 mule deer, 1 rabbit, 1 squirrel, 6 mice, 13 birds—British Columbia.
- Collected by Major A. M. Collins and Edmund Heller (Capt. Marshall Field African Expedition):
187 mammals—Africa.
- Collected by Edmund Heller (Capt. Marshall Field Peruvian Expedition):
1 crab—Peru.
- Collected by Edmund Heller (Capt. Marshall Field African Expedition):
9 mammals, 4 snakes, 11 lizards, 1 centipede—Central Africa.

Collected by Ashley Hine (Capt. Marshall Field Canadian Expedition):
1 red squirrel, 3 chipmunks, 5 ground-squirrels—Banff, Canada.

106 birds, 4 gophers, 6 toads—Saskatchewan, Canada.

Collected by E. S. Riggs (Capt. Marshall Field Patagonian Expedition):

3 rodents, 9 lizards, 1 spider—Argentina.

Collected by C. C. Sanborn:

1 turtle—Highland Park, Illinois.

4 shrews, 7 mice—Lake County, Ill.

1 pocket gopher, 1 box turtle, Lacon, Illinois.

Collected by K. P. Schmidt and L. L. Walters (Capt. Marshall Field Honduras Expedition):

4 birds—Honduras.

Collected by G. P. Sternberg (Capt. Marshall Field Patagonian Expedition):

1 pampas hare, 1 armadillo skull—Patagonia.

Collected by L. L. Walters (Capt. Marshall Field Expedition to Georgia):

36 salamanders, 71 frogs, 8 alligator skins and skulls, 75 alligator eggs, 12 turtles, 23 lizards, 11 lizard eggs, 26 snakes, 1 beetle—Beachton, Georgia.

Collected by L. L. Walters:

1 Franklin's gopher—Chicago Ridge, Illinois.

Collected by L. L. Walters and H. L. Stoddard (Capt. Marshall Field Expedition to Georgia):

134 fishes—Beachton, Georgia.

49 fishes—Florida.

Collected by A. C. Weed and L. L. Pray (Capt. Marshall Field Expedition to Texas):

49 bugs, grasshoppers, flies, beetles, moths, parasites, ants—Brownsville, Texas.

Collected by A. C. Weed and C. C. Sanborn:

169 fishes—Beach, Illinois.

Collected by A. C. Weed, E. P. and F. J. W. Schmidt, L. L. Walters, C. C. Sanborn:

83 frogs and toads, 11 turtles, 20 snakes—Vicinity of Chicago.

Purchases:

26 mammals—Africa.

25 birds—Austria.

17 mammals—Bolivia.

1 duck hawk—Brewer, Maine.

1 bird—British Guiana.

100 birds—Chile.

63 mammals, 290 birds—Eastern Brazil.

120 fishes—Gainesville, Florida.

1 gray squirrel—Highland Park, Ill.

3 salamanders, 20 frogs, 3 snakes—Laurel, Maryland.

26 mammals, 378 birds—Maranhao Prov., Brazil.

7 snakes, 18 lizards, 2 scorpions—Negritos, Peru.

9 fishes—Oneida Lake, New York.

124 mammals, 6 birds, 3 snakes, 26 lizards—Papudo, Chile.

119 birds—South America.

1 bald eagle—Wainwright, Alberta.

8 fishes—Wood's Hole, Mass.

FIELD, STANLEY, Chicago.

2 African lions—Tzavo, Africa (gift).

FRENCH, G. H., Herrin, Illinois.

1 butterfly, 4 moths—Various localities (gift).

FRIERSON, L. S. Jr., Gayle, Louisiana.

10 salamanders, 3 frogs, 7 snakes, 8 lizards, 12 turtles, 1 millipede, 2 crayfish—Gayle, Louisiana (gift).

1 salamander, 8 frogs, 21 lizards, 10 snakes—Caddo Parish, Louisiana (exchange).

6 frogs, 3 snakes, 1 turtle—Frierson and Gayle, Louisiana (gift).

31 mollusks—Wallace Bayou, Gayle, Louisiana (gift).

FRIESSER, JULIUS, Chicago.

1 mammalskull—Kenosha, Wisconsin (gift).

1 lamprey—Holland, Michigan (gift).

1 parrot, 1 macaw—British Guiana (gift).

GERHARD, W. J., Chicago.

12 insects—Illinois and Louisiana (gift).

GREGORY, STEPHEN S., Chicago.

8 birds—Michigan (gift).

GUERET, E. N., Chicago.

3 insects—Illinois and Wisconsin (gift).

HELLMAYR, DR. C. E., Chicago.

4 birds—British Guiana and Argentina (gift).

- HELLMAYR, DR. C. E. and MRS. K., Chicago.
12 beetles, 16 moths, 364 butterflies—Bavaria, Switzerland, France (gift).
- HIGHAM, J. F., Winnipeg, Canada.
1 tree frog—Emerson, Manitoba (gift).
- HOLLING, H. C., Chicago.
6 mink skulls—Leslie, Michigan (gift).
- HUMPHREY, GEORGE R., Ipswich, Massachusetts.
1 abnormal turkey egg—Ipswich, Massachusetts (gift).
- JOHNSON, C. W., Boston, Mass.
2 flies—Boston, Massachusetts (gift).
- KLAUBER, L. M., San Diego, California.
8 lizards, 6 snakes—San Diego Co., California (gift).
- KNAPP, A. S., Chicago.
1 woodchuck—Roelawn, Indiana (gift).
- KRUEGER, HANS, Spooner, Wisconsin.
1 small-mouthed bass—Spooner, Wisconsin (gift).
- LANGABAUGH, J. J., Gray's Lake, Illinois.
1 albino striped ground squirrel—Gray's Lake, Illinois (gift).
- LEVY, R., and NAIBURG, I., Chicago.
1 weasel—Whitehall, Michigan (gift).
- LINCOLN PARK COMMISSION, Chicago.
198 fishes—Various localities (gift).
- MANN, G., Chicago.
1 skate—Azores Islands (gift).
- MARGOLD, J., Chicago.
1 spider—Chicago (gift).
- MARSHALL, BYRON C., Imboden, Arkansas.
1 damselfly, 5 beetles—Imboden, Arkansas (gift).
14 beetles—Imboden, Arkansas (exchange).
- MCCREA, C. S., Chicago.
1 mink—Chundlerville, Illinois (gift).
- MELGES, F. W., Chicago.
1 albino opossum—Odin, Illinois (gift).
- MEYER, U. S., Shreveport, Louisiana.
1 Ichneumon-fly, 1 beetle—Shreveport, Louisiana (gift).
- MONTEIRO, E. J., Rio Janeiro, Brazil.
1 bee, 4 beetles—Itacurassa, Brazil (gift).
- MOORE, DR. A. R., Downer's Grove, Illinois.
1 bald eagle—Joliet, Illinois (gift).
- MORDEN, W. J., Evanston, Illinois.
1 Tibetan antelope, 1 Tibetan Sharpu sheep, 1 burriel sheep—Tibet (gift).
- MUSEUM OF COMPARATIVE ZOOLOGY, Cambridge, Mass.
10 rodents—Argentina (exchange).
9 birds—Patagonia (exchange).
33 frogs, 6 salamanders, 9 turtles—Various localities (exchange).
- MUSEUM OF VERTEBRATE ZOOLOGY, Berkeley, California.
3 Hawaiian rats—Oahu, Hawaii (gift).
- MUSEUM OF ZOOLOGY, Ann Arbor, Michigan.
22 fishes—Various localities (exchange).
- NARBO, DR. SVEN, Stavanger, Norway.
359 caddice-flies, flies, beetles, butterflies, moths and parasites—Stavanger, Norway (gift).
- NEW YORK UNIVERSITY, New York City.
33 frogs, 8 snakes—South Dakota (gift).
- OLSSON, AXEL A., Gloversville, New York.
4 snakes, 65 lizards—Negritos, Peru (gift).
- ORR, MRS. F. B., Chicago.
1 Belgian Griffon dog—(gift).
- OSGOOD, DR. W. H., Chicago.
1 red squirrel, 2 flying squirrels, 4 red-backed mice—Michigan (gift).
- PRAY, L. L., Homewood, Illinois.
1 cotton-tail rabbit, 6 chipmunks—Illinois and Michigan (gift).
1 bug—Homewood, Illinois (gift).
- PSOTA, DR. F. J., Chicago.
2 insects—Los Cheros, Venezuela (gift).
- RUECKERT, A. G., Chicago.
1 coyote skull—Lake County, Illinois (gift).
1 pine snake—Marion County, Florida (gift).
1 diamond-backed rattlesnake—Marion County, Florida (exchange).

- SANBORN C. C., Highland Park, Ill.
 7 birds—Chicago (gift).
 7 frogs—Kansas City, Missouri (gift).
 1 muskrat—Waukegan, Illinois (gift).
- SCHMIDT, F. J. W., Stanley, Wisconsin.
 4 tree frogs, 2 snakes, 1 soft-shelled turtle—Stanley, Wisconsin (gift).
 31 frogs, 3 snakes, 2 turtles—Clark County, Wisconsin (gift).
- SCHMIDT, K. P., Homewood, Illinois.
 24 insects—Homewood, Illinois (gift).
- SCHMIDTZ, F. J., Elgin, Illinois.
 1 albino butterfly—Elgin, Illinois (gift).
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 6 frogs, 6 lizards, 6 turtles—Norman, Oklahoma (exchange).
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 12 frogs—Okmulgee, Oklahoma (exchange).
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Société d'Histoire Naturelle de l'Af-
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Société des Sciences Naturelles du
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Royal Society of South Australia,
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Wales, Sydney.
South Australian Museum, Adelaide.

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Zoologisch-Botanische Gesellschaft,
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Provincial Museum, Toronto.
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Royal Society of Canada, Ottawa.
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Dansk Naturhistorisk Forening, Copenhagen.
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K. Bibliotek, Copenhagen.
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Société Royale de Géographie, Cairo.

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Abo Akademi.
Societas pro Fauna et Flora Fennica, Helsingfors.
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Musée Guimet, Paris.
Muséum National d'Histoire Naturelle, Paris.
La Nature, Paris.

Société Dauphinoise d'Ethnographie et d'Anthropologie, Grenoble.
 Société d'Études Scientifiques, Angers.
 Société d'Ethnographie, Paris.
 Société d'Études des Sciences Naturelles, Reims.
 Société d'Histoire Naturelle, Toulouse.
 Société de Géographie, Paris.
 Société des Américanistes, Paris.
 Société des Sciences, Nancy.
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GERMANY:

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 Bayerische Akademie der Wissenschaften, Munich.
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 Bibliothek Warburg, Leipzig.
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 Deutsche Dendrologische Gesellschaft, Bonn-Poppelsdorf.
 Deutsche Entomologische Gesellschaft, Berlin.
 Deutsche Gesellschaft für Anthropologie, Ethnologie und Urgeschichte, Berlin.
 Deutsche Morgenländische Gesellschaft, Leipzig.
 Deutscher Seefischerei Verein, Berlin.
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 Geographische Gesellschaft, Munich.
 Gesellschaft für Erdkunde, Berlin.
 Gesellschaft zur Beförderung der Gesamten Naturwissenschaften, Marburg.
 Hamburgische Universität.
 K. Museum für Völkerkunde, Berlin.
 K. Preussische Akademie der Wissenschaften, Berlin.
 K. Universitäts Bibliothek, Marburg.
 K. Universitäts Bibliothek, Munich.
 K. Zoologisches Museum, Berlin.
 Museum für Tierkunde und Völkerkunde, Dresden.
 Museum für Völkerkunde, Hamburg.
 Nassauischer Verein für Naturkunde, Wiesbaden.
 Naturhistorischer Verein der Preussischen Rheinlande und Westfalens, Bonn.

Naturwissenschaftlicher Verein, Bremen.
 Ornithologische Gesellschaft in Bayern, Munich.
 Physikalisch-Medizinische Societät, Erlangen.
 Schlesische Gesellschaft für Vaterländische Cultur, Breslau.
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 British Library of Political Science, London.
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 Cambridge Philosophical Society.
 Cardiff Naturalists' Society.
 Croydon Natural History Society.
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 Hull Municipal Museum.
 Imperial Bureau of Entomology, London.
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 Lancashire Sea Fisheries Laboratory, Liverpool.
 Leicester Museum, Art Gallery and Library.
 Linnean Society, London.
 Liverpool Biological Society.
 London School of Economics and Political Science.

Manchester Literary and Philosophical Society.

Manchester Museum.

Marine Biological Association, Plymouth.

National Indian Association, London.

National Library of Wales, Aberystwith.

National Museum of Wales, Cardiff.

Royal Anthropological Institute of Great Britain and Ireland, London.

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Royal Botanic Gardens, Kew.

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Royal Society, London.

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Royal Society of Edinburgh.

School of Oriental Studies, London.

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Wellcome Research Laboratories, London.

Zoological Society, London.

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Archaeological Survey, Allahabad.

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Archaeological Survey, Calcutta.

Archaeological Survey, Madras.

Asiatic Society of Bengal, Calcutta.

Bihar and Orissa Research Society, Patna.

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Botanical Survey, Calcutta.

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Department of Agriculture, Poona.

Department of Agriculture, Puna.

Geological Survey, Calcutta.

Government Cinchona Plantations, Calcutta.

Government Museum, Madras.

Government of India, Calcutta.

Hyderabad Archaeological Society.

Indian Museum, Calcutta.

Journal of Indian Botany, Madras.

Royal Botanic Garden, Calcutta.

University of Calcutta.

Zoological Survey of India, Calcutta.

IRELAND:

Belfast Naturalists' Field Club.

Department of Agriculture, Scientific Investigations, Dublin.

Royal Dublin Society.

Royal Irish Academy, Dublin.

ITALY:

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Istituto Geografico de Agostini, Novara.

Museo Civico di Storia Naturale, Genoa.

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Società dei Naturalisti, Naples.

Società di Scienze Naturali ed Economiche, Florence.

Società Geologica Italiana, Rome.

Società Italiana de Scienze Naturali, Milan.

Società Romana di Antropologia, Rome.

JAPAN:

Anthropological Society of Tokyo.

Government General of Chosen.

Government Research Institute, Taihoku, Formosa.

Imperial Geological Society, Tokyo.

Ornithological Society, Tokyo.

Toboku Imperial University, Sendai.

Tokyo Botanical Society.

JAVA:

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Jardin Botanique, Weltevreden.

Java Instituut, Weltevreden.

K. Natuurkundige Vereeniging in Nederlandsch-Indie, Weltevreden.

MEXICO:

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Museo Nacional de Arqueologia, Historia y Etnografia, Mexico.

Secretaria de Agricultura y Fomento, Direccion de Antropologia, Mexico.

Secretaria de Educacion Publica,
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Sociedad Cientifica "Antonio Alzate,"
Mexico.
Sociedad de Geografia y Estadistica,
Mexico.
Sociedad Geológica Mexicana, Mexico.

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K. Instituut voor de Taal-Land-en
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drik," Rotterdam.
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Art, Wellington.

NORWAY:

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PERU:

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Instituto Historico del Peru, Lima.
Revista del Archivo Nacional, Lima.

POLAND:

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Musei Polonici Historiae Naturales,
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RUSSIA:

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Société des Naturalistes, Leningrad.

SPAIN:

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Junta de Ciencias Naturales, Barcelona.
Junta para Ampliacion de Estudios e
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R. Academia de Ciencias Exactas,
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Musées d'Histoire Naturelle, Lau-
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Naturforschende Gesellschaft, Basel.
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Cooper Ornithological Club, Hollywood.

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State Mining Bureau, Sacramento.

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GEORGIA:

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HAWAII:

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Hawaiian Entomological Society,
Honolulu.
Hawaiian Volcano Observatory, Honolulu.
Hawaiian Sugar Planters' Association,
Honolulu.
University of Hawaii, Honolulu.

IDAHO:

Mining Industry, Boise.
State Historical Society of Idaho,
Boise.

ILLINOIS:

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Audubon Society, Chicago.
Augustana College, Rock Island.
Board of Education, Chicago.
Chicago Historical Society.
Chicago Public Library.
Division of Natural History Survey,
Urbana.
Forestry Service, Urbana.
Geographic Society, Chicago (gift).
Hardwood Record, Chicago (gift).
Isak Walton League of America,
Chicago (gift).
John Crerar Library, Chicago.
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Northwestern University, Evanston.
Open Court Publishing Company,
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State Academy of Science, Springfield.
State Board of Agriculture, Springfield.
State Geological Survey, Urbana.
State Historical Library, Springfield.
State Water Survey, Urbana.
University of Chicago.
University of Illinois, Urbana.

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Department of Conservation, Indianapolis.
Indiana University, Bloomington.
John Herron Art Institute, Indianapolis.
Legislative Reference Bureau, Indianapolis.
Purdue University, Lafayette.
University of Notre Dame.

IOWA:

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Historical, Memorial and Art Department,
Des Moines.
Iowa Geological Survey, Des Moines.
Iowa Horticultural Society, Des Moines.
Iowa State College, Ames.
University of Iowa, Iowa City.

KANSAS:

Agricultural Experiment Station,
Manhattan.
State Board of Agriculture, Topeka.
State Geological Survey, Lawrence.
State Historical Society, Topeka.
University of Kansas, Lawrence.

KENTUCKY:

Agricultural Experiment Station,
Louisville.
Kentucky Geological Survey, Frankfort.

LOUISIANA:

Agricultural Experiment Station,
Baton Rouge.

MAINE:

Agricultural Experiment Station,
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Bowdoin College, Brunswick.
Portland Public Library.
Portland Society of Natural History.

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College Park.
Enoch Pratt Free Library, Baltimore.
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MASSACHUSETTS:

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Amherst.
American Academy of Arts and Sciences,
Boston.
American Antiquarian Society, Worcester.
Boston Public Library.
Harvard College, Museum of Comparative Zoology, Cambridge.
Harvard University, Arnold Arboretum,
Jamaica Plain.
Harvard University, Gray Herbarium,
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Museum of Fine Arts, Boston.
New Bedford Free Library.
Peabody Institute.
Peabody Museum, Cambridge.
Peabody Museum, Salem.

Phillips Academy, Andover.
Salem Public Library.
Smith College, Northampton.
Springfield City Library Association.
Williams College, Williamstown.

MICHIGAN:

Agricultural Experiment Station,
Agricultural College.
Department of Conservation, Geo-
logical Survey Division, Lansing.
Detroit Institute of Art.
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Michigan State Library, Lansing.
State Board of Agriculture, Lansing.
State Board of Library Commissions,
Lansing.
University of Michigan, Ann Arbor.

MINNESOTA:

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University Farm.
Minneapolis Institute of Arts.
Minnesota Historical Society, Saint
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Saint Paul Institute.
University of Minnesota, Minneapolis.

MISSISSIPPI:

Agricultural Experiment Station,
Agricultural College.
Mississippi State Geological Survey,
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MISSOURI:

Agricultural Experiment Station,
Columbia.
Bureau of Geology and Mines, Rolla.
City Art Museum, Saint Louis.
Missouri Botanic Garden, Saint Louis.
Missouri Historical Society, Columbia.
Saint Louis Public Library.
Saint Louis University.
University of Missouri School of Mines,
Rolla.
Washington University, Saint Louis.

NEBRASKA:

University of Nebraska, Lincoln.

NEVADA:

Agricultural Experiment Station,
Reno.

NEW JERSEY:

Agricultural Experiment Station,
Trenton.
Department of Conservation and
Development, Trenton.
Newark Museums Association.
Princeton University.

NEW MEXICO:

Historical Society, Santa Fe.
New Mexico Museum, Santa Fe.

NEW YORK:

Agricultural Experiment Station,
Geneva.
American Academy in Rome, New
York.
American Geographical Society, New
York.
American Association of Museums,
New York (gift).
American Museum of Natural History,
New York.
Asia Publishing Company, New York.
Brooklyn Botanic Garden.
Brooklyn Institute of Arts and Sci-
ences.
Buffalo Society of Natural Sciences.
Columbia University, New York.
Cooper Union for the Advancement of
Science and Art, New York.
Cornell University, Ithaca.
Forest and Stream Publishing Compa-
ny, New York.
Garden Club of America, New York.
Inter-American Magazine, New York.
Japan Society, New York.
Metropolitan Museum of Art, New
York.
Museum of the American Indian, New
York.
New York Academy of Sciences,
New York.
New York Botanical Garden, New
York.
New York Historical Society, New
York.
Pratt Institute, New York.
Public Library, New York.
Rockefeller Foundation, New York.
State College of Forestry, Syracuse.
State Library, Albany.
State Museum, Albany.
Statens Island Institute of Arts and
Sciences, New York.
Stone Publishing Company, New York.
University of the State of New York,
Albany.
Vassar College, Poughkeepsie.
Zoological Society, New York.

NORTH CAROLINA:

Elisha Mitchell Scientific Society,
Chapel Hill.

NORTH DAKOTA:

Biological Station, University Station.
Geological Survey, University Station.
Historical Society, Grand Forks.
University of North Dakota, University.



AMERICAN BALD EAGLE.
Taxidermy by Mr. Ashley Hine.

OHIO:

Agricultural Experiment Station,
Wooster.
Cincinnati Museum Association.
Cincinnati Society of Natural History.
Cleveland Museum of Art.
Cleveland Public Library.
Denison University, Granville.
Geological Survey, Columbus.
Ohio Academy of Science, Columbus.
State Archaeological and Historical
Society, Columbus.
State University, Columbus.
University of Cincinnati.
Wilson Ornithological Club, Oberlin.

OKLAHOMA:

Oklahoma Academy of Science,
Norman.
University of Oklahoma, Norman.

OREGON:

Agricultural Experiment Station,
Corvallis.
University of Oregon, Eugene.

PENNSYLVANIA:

Academy of Natural Sciences, Phila-
delphia.
American Philosophical Society, Phila-
delphia.
Bryn Mawr College.
Bureau of Topographical and Geolog-
ical Survey, Harrisburg.
Carnegie Institute, Pittsburgh.
Carnegie Library, Pittsburgh.
Carnegie Museum, Pittsburgh.
Drexel College, Philadelphia.
Engineers' Society of Western Penn-
sylvania, Pittsburgh.
Fish Culturists' Association, Phila-
delphia.
Franklin Institute, Philadelphia.
Lehigh University, Bethlehem.
Pennsylvania Museum and School of
Industrial Art, Philadelphia.
Philadelphia College of Pharmacy.
Philadelphia Commercial Museum.
Sullivant Moss Society, Pittsburgh.
Tloga Point Museum, Athens.
University of Pennsylvania, Phila-
delphia.
University of Pennsylvania, Museum,
Philadelphia.
Wagner Free Institute of Science,
Philadelphia.

PHILIPPINE ISLANDS:

Bureau of Education, Manila.
Department of Agriculture, Manila.
Department of Agriculture and
Natural Resources, Manila.
Department of Interior, Bureau of
Science, Manila.

SOUTH CAROLINA:

Charleston Museum.

SOUTH DAKOTA:

Agricultural Experiment Station,
Brookings.
Geological and Natural History Sur-
vey, Vermilion.

TENNESSEE:

Department of Education, Division of
Geology, Nashville.

TEXAS:

Agricultural Experiment Station,
College Station.
Scientific Society, San Antonio.
University of Texas, Austin.

VERMONT:

Agricultural Experiment Station,
Burlington.
State Geological Survey, Burlington.

VIRGINIA:

Agricultural Experiment Station,
Charlottesville.
State Forester, Charlottesville.
State Library, Richmond.
University of Virginia, Charlottesville.
Virginia Geological Survey, Charlottes-
ville.

WASHINGTON:

Agricultural Experiment Station,
Seattle.
Department of Conservation and
Development, Division of Geology,
Olympia.
Mountaineers, Seattle.
Pacific Northwest Bird and Mammal
Society, Seattle.
Puget Sound Biological Station,
Seattle.
Washington University, Seattle.
Washington University, Historical So-
ciety, Seattle.

WASHINGTON, D. C.:

American Association for the Advance-
ment of Science (gift).
American Mining Congress.
Association for the Study of Negro
Life and History.
Bahdi Library Committee.
Carnegie Endowment for Interna-
tional Peace (gift).
Carnegie Institution of Washington
(gift).
Daily Science News Bulletin.
Library of Congress.
National Academy of Science.

National Association of Audubon Societies.
National Parks Bulletin.
National Research Council.
Pan American Union.
Smithsonian Institution.
United States Government.

WEST VIRGINIA:

Agricultural Experiment Station,
Morgantown.
State Department of Agriculture,
Charleston.
West Virginia University, Morgan-
town.

WISCONSIN:

Agricultural Experiment Station,
Madison.
Beloit College.
Geological and Natural History Sur-
vey, Madison.
Public Museum of Milwaukee.
State Horticultural Society, Madison.
University of Wisconsin, Madison.
Wisconsin Archaeological Society,
Madison.

Alleman, Gellert, Swarthmore (gift).
Ames, Oakes, Boston.
Ayer, Edward E., Chicago (gift).
Bailey, L. H., Ithaca.
Barnes, R. Magoon, Lacon (gift).
Burket, Walter C., (gift).
Chalmers, William J., Chicago (gift).
Cockerell, T. D. A., Boulder.
Cook, Melville T., Porto Rico.
Darlington, H. T., East Lansing.
Davies, D. C., Chicago (gift).
Deane, Ruthven, Chicago (gift).
Eckstrom, Mrs. Fanny, Brewer (gift).
Evans, Alexander W., New Haven.
Farwell, Oliver A., Detroit.
Ferry, Mrs. A., Chicago (gift).

Field, Stanley, Chicago (gift).
Gerhard, W. J., Chicago (gift).
Godby, A. H., Carrsville (gift).
Gore, Willard C., Chicago (gift).
Harper, Roland M., University (gift).
Hellmayer, C. E., Chicago (gift).
Husband, Rachel, Lawrence (gift).
Jeançon, Jean Allard, Denver.
Laufer, Berthold, Chicago (gift).
Lewis, A. B., Chicago (gift).
Ligare, A. G., Glencoe.
Lindsey, A. W., Granville (gift).
Linton, Ralph, Chicago (gift).
McBride, J. Francis, Chicago (gift).
Mason, J. Alden, New York (gift).
Miller, Robert B., Urbana (gift).
Mills, William C., Columbus.
Millsbaugh, Mrs. C. F., Chicago (gift).
Morse, Edward S., Salem.
Osborn, Henry P., New York.
Osgood, Wilfred H., Chicago (gift).
Pearson, T. Gilbert, New York (gift).
Pittier, H., Washington.
Price, Ira M., Chicago (gift).
Record, Samuel J., New Haven (gift).
Reed, H. D., Ithaca.
Richmond, Charles W., Washington
(gift).
Riggs, Elmer S., Chicago (gift).
Robinson, B. L., Cambridge.
Roewode, K., New York (gift).
Rogers, A. P., Stanford (gift).
Safford, W. E., Washington (gift).
Schmidt, Karl P., Chicago (gift).
Sherff, Earl E., Chicago (gift).
Standley, Paul C., Washington (gift).
Starr, Frederick, Seattle.
Sternberg, Charles M., Oakley (gift).
Tozzer, Alfred M., Cambridge.
Vioeca, Percy Jr., New Orleans (gift).
Walcott, Robert H., Lincoln (gift).
Waterman, T. T., Fresno (gift).
Wheeler, H. E., Chicago (gift).
Zimmer, John T., Chicago (gift).

ARTICLES OF INCORPORATION

STATE OF ILLINOIS

DEPARTMENT OF STATE

WILLIAM H. HINRICHSEN, *Secretary of State.*

TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETING:

Whereas, a Certificate duly signed and acknowledged having been filed in the office of the Secretary of State, on the 16th day of September, A. D. 1893, for the organization of the COLUMBIAN MUSEUM OF CHICAGO, under and in accordance with the provisions of "An Act Concerning Corporations," approved April 18, 1872, and in force July 1, 1872, and all acts amendatory thereof, a copy of which certificate is hereto attached.

Now, therefore, I, William H. Hinrichsen, Secretary of State of the State of Illinois, by virtue of the powers and duties vested in me by law, do hereby certify that the said COLUMBIAN MUSEUM OF CHICAGO is a legally organized Corporation under the laws of this State.

In Testimony Whereof, I hereto set my hand and cause to be affixed the Great Seal of State. Done at the City of Springfield, this 16th day of September, in the year of our Lord one thousand eight hundred and ninety-three, and of the Independence of the United States the one hundred and eighteenth.

W. H. HINRICHSEN,
Secretary of State.

[SEAL]

TO HON. WILLIAM H. HINRICHSEN,

SECRETARY OF STATE:

SIR:

We, the undersigned citizens of the United States, propose to form a corporation under an act of the General Assembly of the State of Illinois, entitled "An Act Concerning Corporations," approved April 18, 1872, and all acts amendatory thereof; and that for the purposes of such organization we hereby state as follows, to-wit:

1. The name of such corporation is the "COLUMBIAN MUSEUM OF CHICAGO."
2. The object for which it is formed is for the accumulation and dissemination of knowledge, and the preservation and exhibition of objects illustrating Art, Archaeology, Science and History.
3. The management of the aforesaid museum shall be vested in a Board of FIFTEEN (15) TRUSTEES, five of whom are to be elected every year.
4. The following named persons are hereby selected as the Trustees for the first year of its corporate existence:

Edward E. Ayer, Charles B. Farwell, George E. Adams, George R. Davis, Charles L. Hutchinson, Daniel H. Burnham, John A. Roche, M. C. Bullock, Emil G. Hirsch, James W. Ellsworth, Allison V. Armour, O. F. Aldis, Edwin Walker, John C. Black and Frank W. Gunsaulus.

5. The location of the Museum is in the City of Chicago, County of Cook, and State of Illinois.

(Signed),

George E. Adams, C. B. Farwell, Sidney C. Eastman, F. W. Putnam, Robert McCurdy, Andrew Peterson, L. J. Gage, Charles L. Hutchinson, Ebenezer Buckingham, Andrew McNally, Edward E. Ayer, John M. Clark, Herman H. Kohlssaat, George Schneider, Henry H. Getty, William R. Harper, Franklin H. Head, E. G. Keith, J. Irving Pearce, Abel F. Hatch, Henry Wade Rogers, Thomas B. Bryan, L. Z. Leiter, A. C. Bartlett, A. A. Sprague, A. C. McClurg, James W. Scott, Geo. F. Bissell, John R. Walsh, Chas. Fitzsimmons, John A. Roche, E. B. McCagg, Owen F. Aldis, Ferdinand W. Peck, James H. Dole, Joseph Stockton, Edward B. Butler, John McConnell, R. A. Waller, H. C. Chatfield-Taylor, A. Crawford, Wm. Sooy Smith, P. S. Peterson, John C. Black, Jno. J. Mitchell, C. F. Gunther, George R. Davis, Stephen A. Forbes, Robert W. Patterson, Jr., M. C. Bullock, Edwin Walker, George M. Pullman, William E. Curtis, James W. Ellsworth, William E. Hale, Wm. T. Baker, Martin A. Ryerson, Huntington W. Jackson, N. B. Ream, Norman Williams, Melville E. Stone, Bryan Lathrop, Eliphalet W. Blatchford, Philip D. Armour.

STATE OF ILLINOIS }
COOK COUNTY } ss.

I, G. R. MITCHELL, a NOTARY PUBLIC in and for said County, do hereby certify that the foregoing petitioners personally appeared before me and acknowledged severally that they signed the foregoing petition as their free and voluntary act for the uses and purposes therein set forth.

Given under my hand and notarial seal this 14th day of September, 1893.

G. R. MITCHELL,

[SEAL]

NOTARY PUBLIC, COOK COUNTY, ILL.

CHANGE OF NAME.

Pursuant to a resolution passed at a meeting of the corporate members held the 25th day of June, 1894, the name of the COLUMBIAN MUSEUM was changed to FIELD COLUMBIAN MUSEUM. A certificate to this effect was filed June 26, 1894, in the office of the Secretary of State for Illinois.

CHANGE OF NAME.

Pursuant to a resolution passed at a meeting of the corporate members held the 8th day of November, 1905, the name of the FIELD COLUMBIAN MUSEUM was changed to FIELD MUSEUM OF NATURAL HISTORY. A certificate to this effect was filed November 10, 1905, in the office of the Secretary of State for Illinois.

CHANGE IN ARTICLE 3.

Pursuant to a resolution at a meeting of the corporate members held the 10th day of May, 1920, the management of FIELD MUSEUM OF NATURAL HISTORY shall be invested in a Board of TWENTY-ONE (21) TRUSTEES, who shall be elected in such manner and for such time and term of office as may be provided for by the By-Laws. A certificate to this effect was filed May 21, 1920, in the office of the Secretary of State for Illinois.

AMENDED BY-LAWS

JANUARY 1926

ARTICLE I

MEMBERS

SECTION 1. Members shall be of eleven classes, Corporate Members, Honorary Members, Patrons, Benefactors, Fellows, Life Members, Non-Resident Life Members, Associate Members, Non-Resident Associate Life Members, Sustaining Members, and Annual Members.

SECTION 2. The Corporate Members shall consist of the persons named in the articles of incorporation, and of such other persons as shall be chosen from time to time by the Board of Trustees at any of its meetings, upon the recommendation of the Executive Committee; provided, that such person named in the articles of incorporation shall, within ninety days from the adoption of these By-Laws, and persons hereafter chosen as Corporate Members shall, within ninety days of their election, pay into the treasury the sum of twenty dollars (\$20.00) or more. Corporate Members becoming Life Members, Patrons or Honorary Members shall be exempt from dues. Annual meetings of said Corporate Members shall be held at the same place and on the same day that the annual meeting of the Board of Trustees is held.

SECTION 3. Honorary Members shall be chosen by the Board from among persons who have rendered eminent service to science, and only upon unanimous nomination of the Executive Committee. They shall be exempt from all dues.

SECTION 4. Patrons shall be chosen by the Board upon recommendation of the Executive Committee from among persons who have rendered eminent service to the Museum. They shall be exempt from all dues, and, by virtue of their election as Patrons, shall also be Corporate Members.

SECTION 5. Any person contributing or devising the sum of One Hundred Thousand Dollars (\$100,000.00) in cash, or securities, or property to the funds of the Museum, may be elected a Benefactor of the Museum.

SECTION 6. Any person contributing the sum of Five Thousand Dollars (\$5,000.00) in cash or securities to the funds of the Museum, may be elected a Fellow of the Museum, who after being so elected shall have the right in perpetuity to appoint the successor in said Fellowship.

SECTION 7. Any person paying into the treasury the sum of Five Hundred Dollars (\$500.00), at any one time, shall, upon the unanimous vote of the Board, become a Life Member. Life Members shall be exempt from all dues, and shall enjoy all the privileges and courtesies of the Museum that are accorded to members of the Board of Trustees. Any person residing fifty miles or more from the city of Chicago, paying into the treasury the sum of One Hundred Dollars (\$100.00) at any one time, shall, upon the unanimous vote of the Board, become a Non-Resident Life Member. Non-Resident Life Members shall be exempt from all dues, and shall enjoy all the privileges and courtesies of the Museum that are accorded to members of the Board of Trustees.

SECTION 8. Any person paying into the treasury of the Museum the sum of one hundred dollars (\$100.00), at any one time, shall upon the unanimous vote of the Board, become an Associate Member. Associate Members shall be

entitled to: tickets admitting member and members of family, including non-resident home guests; all publications of the Museum, if so desired; reserved seats for all lectures and entertainments under the auspices of the Museum, provided reservation is requested in advance; and admission of holder of membership and accompanying party to all special exhibits and Museum functions day or evening. Any person residing fifty miles or more from the city of Chicago, paying into the treasury the sum of Fifty Dollars (\$50.00) at any one time, shall, upon the unanimous vote of the Board, become a Non-Resident Associate Life Member. Non-Resident Associate Life Members shall be exempt from all dues, and shall enjoy all the privileges and courtesies of the Museum that are accorded to Associate Members.

SECTION 9. Sustaining Members shall consist of such persons as are selected from time to time by the Board of Trustees at any of its meetings, and who shall pay an annual fee of twenty-five dollars (\$25.00), payable within thirty days after notice of election and within thirty days after each recurring annual date. This Sustaining Membership entitles the member to free admission for the member and family to Museum on any day and allows 25 admission coupons, which may be used by any one, the Annual Report and such other Museum documents or publications as may be requested in writing. When a Sustaining Member has paid the annual fee of \$25.00 for six years, such member shall be entitled to become an Associate Member.

SECTION 10. Annual Members shall consist of such persons as are selected from time to time by the Board of Trustees at any of its meetings, and who shall pay an annual fee of ten dollars (\$10.00), payable within thirty days after each recurring annual date. An Annual Membership shall entitle the member to a card of admission for the member and family during all hours when the Museum is open to the public, and free admission for the member and family to all Museum lectures or entertainments. This membership will also entitle the holder to the courtesies of the membership privileges of every Museum of note in the United States and Canada, so long as the existing system of co-operative interchange of membership tickets shall be maintained, including tickets for any lectures given under the auspices of any of the Museums during a visit to the cities in which the co-operative museums are located.

SECTION 11. All membership fees, excepting Sustaining and Annual, shall hereafter be applied to a permanent Membership Endowment Fund, the interest only of which shall be applied for the use of the Museum as the Board of Trustees may order.

ARTICLE II

BOARD OF TRUSTEES

SECTION 1. The Board of Trustees shall consist of twenty-one members. The respective members of the Board now in office, and those who shall hereafter be elected, shall hold office during life. Vacancies occurring in the Board shall be filled at a regular meeting of the Board, upon the nomination of the Executive Committee made at a preceding regular meeting of the Board, by a majority vote of the members of the Board present.

SECTION 2. Regular meetings of the Board shall be held on the third Monday of each month. Special meetings may be called at any time by the President, and shall be called by the Secretary upon the written request of three Trustees. Five Trustees shall constitute a quorum, except for the election of officers or the adoption of the Annual Budget, when seven Trustees shall be required, but meetings may be adjourned by any less number from day to day, or to a day fixed previous to the next regular meeting.

SECTION 3. Reasonable written notice, designating the time and place of holding meetings, shall be given by the Secretary.

ARTICLE III

HONORARY TRUSTEES

SECTION 1. As a mark of respect, and in appreciation of services performed for the Institution, those Trustees who by reason of inability, on account of change of residence, or for other cause or from indisposition to serve longer in such capacity shall resign their place upon the Board, may be elected, by a majority of those present at any regular meeting of the Board, an Honorary Trustee for life. Such Honorary Trustee will receive notice of all meetings of the Board of Trustees, whether regular or special, and will be expected to be present at all such meetings and participate in the deliberations thereof, but an Honorary Trustee shall not have the right to vote.

ARTICLE IV

OFFICERS

SECTION 1. The officers shall be a President, a First Vice-President, a Second Vice-President, a Third Vice-President, a Secretary, an Assistant Secretary and a Treasurer. They shall be chosen by ballot by the Board of Trustees, a majority of those present and voting being necessary to elect. The President, the First Vice-President, the Second Vice-President, and the Third Vice-President shall be chosen from among the members of the Board of Trustees. The meeting for the election of officers shall be held on the third Monday of January of each year, and shall be called the Annual Meeting.

SECTION 2. The officers shall hold office for one year, or until their successors are elected and qualified, but any officer may be removed at any regular meeting of the Board of Trustees by a vote of two-thirds of all the members of the Board. Vacancies in any office may be filled by the Board at any meeting.

SECTION 3. The officers shall perform such duties as ordinarily appertain to their respective offices, and such as shall be prescribed by the By-Laws, or designated from time to time by the Board of Trustees.

ARTICLE V

THE TREASURER

SECTION 1. The Treasurer shall be custodian of the funds of the Corporation except as hereinafter provided. He shall make disbursements only upon warrants drawn by the Director and countersigned by the President. In the absence or inability of the Director, warrants may be signed by the Chairman of the Finance Committee, and in the absence or inability of the President, may be countersigned by one of the Vice-Presidents, or any member of the Finance Committee.

SECTION 2. The securities and muniments of title belonging to the corporation shall be placed in the custody of some Trust Company of Chicago to be designated by the Board of Trustees, which Trust Company shall collect the income and principal of said securities as the same become due, and pay same to the Treasurer, except as hereinafter provided. Said Trust Company shall allow access to and deliver any or all securities or muniments of title to the joint order of the following officers, namely The President or one of the Vice-Presidents, jointly with the Chairman, or one of the Vice-Chairmen, of the Finance Committee of the Museum.

SECTION 3. The Treasurer shall give bond in such amount, and with such sureties as shall be approved by the Board of Trustees.

SECTION 4. The Harris Trust & Savings Bank of Chicago shall be Custodian of "The N. W. Harris Public School Extension of Field Museum" fund. The bank shall make disbursements only upon warrants drawn by the Director

and countersigned by the President. In the absence or inability of the Director, warrants may be signed by the Chairman of the Finance Committee, and in the absence or inability of the President, may be countersigned by one of the Vice-Presidents, or any member of the Finance Committee.

ARTICLE VI

THE DIRECTOR

SECTION 1. The Board of Trustees shall elect a Director of the Museum, who shall remain in office until his successor shall be elected. He shall have immediate charge and supervision of the Museum, and shall control the operations of the Institution, subject to the authority of the Board of Trustees and its Committees. The Director shall be the official medium of communication between the Board, or its Committees, and the scientific staff and maintenance force.

SECTION 2. There shall be four scientific departments of the Museum—Anthropology, Botany, Geology and Zoology; each under the charge of a Curator, subject to the authority of the Director. The Curators shall be appointed by the Board upon the recommendation of the Director, and shall serve during the pleasure of the Board. Subordinate staff officers in the scientific departments shall be appointed and removed by the Director upon the recommendation of the Curators of the respective Departments. The Director shall have authority to employ and remove all other employees of the Museum.

SECTION 3. The Director shall make report to the Board at each regular meeting, recounting the operations of the Museum for the previous month. At the Annual Meeting, the Director shall make an Annual Report, reviewing the work for the previous year, which Annual Report shall be published in pamphlet form for the information of the Trustees and Members, and for free distribution in such number as the Board may direct.

ARTICLE VII

AUDITOR

SECTION 1. The Board shall appoint an Auditor, who shall hold his office during the pleasure of the Board. He shall keep proper books of account, setting forth the financial condition and transactions of the Corporation, and of the Museum, and report thereon at each regular meeting, and at such other times as may be required by the Board. He shall certify to the correctness of all bills rendered for the expenditure of the money of the Corporation.

ARTICLE VIII

COMMITTEES

SECTION 1. There shall be five Committees, as follows: Finance, Building, Auditing, Pension and Executive.

SECTION 2. The Finance Committee shall consist of five members, the Auditing and Pension Committees shall each consist of three members, and the Building Committee shall consist of five members. All members of these four Committees shall be elected by ballot by the Board at the Annual Meeting, and shall hold office for one year, and until their successors are elected and qualified. In electing the members of these Committees, the Board shall designate the Chairman and Vice-Chairman by the order in which the members are named in the respective Committee; the first member named shall be Chairman, the second named the Vice-Chairman, and the third named, Second Vice-chairman, succession to the Chairmanship being in this order in the event of the absence or disability of the Chairman.



THE LATE DAVID HENNER AT WORK IN THE STANLEY FIELD PLANT REPRODUCTION LABORATORY.

SECTION 3. The Executive Committee shall consist of the President of the Board, the Chairman of the Finance Committee, the Chairman of the Building Committee, the Chairman of the Auditing Committee, the Chairman of the Pension Committee, and three other members of the Board to be elected by ballot at the Annual Meeting.

SECTION 4. Four members shall constitute a quorum of the Executive Committee, and in all standing Committees two members shall constitute a quorum. In the event that, owing to the absence or inability of members, a quorum of the regularly elected members cannot be present at any meeting of any Committee, then the Chairman thereof, or his successor, as herein provided, may summon any members of the Board of Trustees to act in place of the absentee.

SECTION 5. The Finance Committee shall have supervision of investing the endowment and other permanent funds of the Corporation, and the care of such real estate as may become its property. It shall have authority to invest, sell, and reinvest funds, subject to the approval of the Board.

SECTION 6. The Building Committee shall have supervision of the construction, reconstruction, and extension of any and all buildings used for Museum purposes.

SECTION 7. The Executive Committee shall be called together from time to time as the Chairman may consider necessary, or as he may be requested to do by three members of the Committee, to act upon such matters affecting the administration of the Museum as cannot await consideration at the Regular Monthly Meetings of the Board of Trustees. It shall, before the beginning of each fiscal year, prepare and submit to the Board an itemized Budget, setting forth the probable receipts from all sources for the ensuing year, and make recommendations as to the expenditures which should be made for routine maintenance and fixed charges. Upon the adoption of the Budget by the Board, the expenditures as stated are authorized.

SECTION 8. The Auditing Committee shall have supervision over all accounting and bookkeeping, and full control of the financial records. It shall cause the same, once each year, or oftener, to be examined by an expert individual or firm, and shall transmit the report of such expert individual or firm to the Board at the next ensuing regular meeting after such examination shall have taken place.

SECTION 9. The Pension Committee shall determine by such means and processes as shall be established by the Board of Trustees to whom and in what amount the Pension Fund shall be distributed. These determinations or findings shall be subject to the approval of the Board of Trustees.

SECTION 10. The Chairman of each Committee shall report the acts and proceedings thereof at the next ensuing regular meeting of the Board.

SECTION 11. The President shall be ex-officio a member of all Committees and Chairman of the Executive Committee. Vacancies occurring in any Committee may be filled by ballot at any regular meeting of the Board.

ARTICLE IX

NOMINATING COMMITTEE

SECTION 1. At the November meeting of the Board each year, a Nominating Committee of three shall be chosen by lot. Said Committee shall make nominations for membership of the Finance Committee, the Building Committee, the Auditing Committee, and the Pension Committee, and for three members of the Executive Committee, from among the Trustees, to be submitted at the ensuing December meeting and voted upon at the following Annual Meeting in January.

ARTICLE X

SECTION 1. Whenever the word "Museum" is employed in the By-Laws of the Corporation, it shall be taken to mean the building in which the Museum as an Institution is located and operated, the material exhibited, the material in study collections, or in storage, furniture, fixtures, cases, tools, records, books, and all appurtenances of the Institution and the workings, researches, installations, expenditures, field work, laboratories, library, publications, lecture courses, and all scientific and maintenance activities.

SECTION 2. These By-Laws may be amended at any regular meeting of the Board of Trustees by a two-thirds vote of all the members present, provided the amendment shall have been proposed at a preceding regular meeting.

BENEFACTORS

| | |
|--------------------------|-------------------------|
| AYER, EDWARD E. | *HARRIS, NORMAN W. |
| BUCKINGHAM, MISS KATE S. | *HIGINBOTHAM, HARLOW N. |
| *FIELD, JOSEPH N. | *PULLMAN, GEORGE M. |
| FIELD, MARSHALL III | RAYMOND, MRS. ANNA |
| FIELD, STANLEY | LOUISE |
| GRAHAM, ERNEST R. | *RAYMOND, JAMES NELSON |
| HARRIS, ALBERT W. | SIMPSON, JAMES |
| | *STURGES, MRS. MARY D. |

HONORARY MEMBERS

| | |
|------------------------|----------------------------|
| AYER, EDWARD E. | HARRIS, ALBERT W. |
| AYER, MRS. EDWARD E. | JONES, ARTHUR B. |
| BLACKSTONE, MRS. T. B. | KEEP, CHAUNCEY |
| CHALMERS, WILLIAM J. | MCCORMICK, STANLEY |
| CRANE, CHARLES R. | ROSENWALD, MRS. AUGUSTA N. |
| CRANE, RICHARD T. JR., | ROSENWALD, JULIUS |
| FIELD, MARSHALL III | RYERSON, MARTIN A. |
| FIELD, STANLEY | SIMPSON, JAMES |
| GRAHAM, ERNEST R. | SPRAGUE, ALBERT A. |

PATRONS

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| BUTLER, EDWARD B. | PAYNE, JOHN BARTON |
| COLLINS, ALFRED M. | PROBST, EDWARD |
| CUMMINGS, MRS. ROBERT F. | ROOSEVELT, KERMIT |
| DAY, LEE GARNETT | ROOSEVELT, COL. THEODORE |
| KELLEY, WILLIAM V. | SARGENT, HOMER E. |
| KENNEDY, VERNON SHAW | STRAWN, SILAS H. |
| KUNZ, GEORGE F. | WHITE, HOWARD J. |

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PROBST, EDWARD

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ROOSEVELT, COL. THEODORE
RYERSON, MARTIN A.

SARGENT, HOMER E.
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SMITH, SOLOMON A.
SPRAGUE, ALBERT A.
STONE, MELVILLE E.
STRAWN, SILAS H.

WHITE, HOWARD J.
WRIGLEY, WILLIAM, JR.

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ALDIS, OWEN F.

ELLSWORTH, JAMES W.

LIFE MEMBERS

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ALDIS, ARTHUR T.
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ARMOUR, J. OGDEN
ARMOUR, LESTER
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BLAIR, HENRY A.
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BLOCK, PHILIP D.
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BORDEN, JOHN
BORLAND, CHAUNCEY B.
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BUFFINGTON, EUGENE J.
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BUTLER, EDWARD B.
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CLOW, WILLIAM E.
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 (N. R.)
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CRAMER, MRS. KATHARINE S.
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CRANE, RICHARD T., JR.
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CROWELL, H. P.
CUDAHY, EDWARD A., SR.
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DAY, ALBERT M.
DECKER, ALFRED
DEERING, CHARLES
DEFREES, JOSEPH H.
DELANO, FREDERIC A.
DICK, ALBERT BLAKE
DIERSSEN, FERDINAND W.
DONNELLEY, REUBEN H.
DONNELLEY, THOMAS E.
DOUGLAS, JAMES H.
DRAKE, JOHN B.
DRAKE, TRACY C.

ECKHART, B. A.
EDMUNDS, PHILIP S.

FAIR, ROBERT M.
FARNUM, HENRY W.
FARR, MISS SHIRLEY
FARWELL, ARTHUR L.
FARWELL, FRANCIS C.
FARWELL, JOHN V.
FARWELL, WALTER
FAY, C. N.
FELT, DORR E.
FENTON, HOWARD W.
FERGUSON, LOUIS A.
FERRY, MRS. ABBY FARWELL
FIELD, JOSEPH NASH II

FIELD, MARSHALL III
 FIELD, MRS. SARA CARROLL
 FIELD, STANLEY
 FINLEY, WILLIAM H.
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 FORGAN, DAVID R.
 FORSYTH, ROBERT
 FYFFE, COLIN C. H.

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 HASTINGS, SAMUEL M.
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 HIBBARD, FRANK
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 HIPPAH, LOUIS A.
 HOPKINS, J. M.
 HOPKINS, L. J.
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 HUGHITT, MARVIN

INSULL, SAMUEL
 INSULL, SAMUEL, JR.

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 KING, FRANCIS

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 SPALDING (N. R.)

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 LOGAN, SPENCER H.
 LORD, JOHN B.
 LOWDEN, FRANK O.
 LYTTON, HENRY C.

MAC DOWELL, CHARLES H.
 MAC VEAGH, FRANKLIN
 MARK, CLAYTON
 MARKHAM, CHARLES H.
 MARSHALL, BENJAMIN H.
 MARTIN, WILLIAM P., SR.
 MASON, WILLIAM S.
 MCCORMICK, CYRUS H.
 MCCORMICK, MRS. EDITH
 ROCKEFELLER
 MCCORMICK, HAROLD F.
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 MCNULTY, T. J.
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 MORTON, JOY
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PALMER, POTTER
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PATTERSON, JOSEPH M.
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PAYSON, GEORGE S.
PEABODY, AUGUSTUS S.
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RODMAN, THOMAS CLIFFORD
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RUNNELLS, JOHN S.
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RUSSELL, EDWARD P.
RYERSON, MRS. CARRIE H.
RYERSON, EDWARD L.
RYERSON, MARTIN A.

SCHWEPPE, CHARLES H.
SCOTT, FRANK H.
SCOTT, GEORGE E.
SCOTT, HAROLD N.
SCOTT, JOHN W.
SHAFER, JOHN C.
SHEDD, JOHN G.
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STRAWN, SILAS H.
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WILSON, THOMAS E.
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WINSTON, GARRARD B.
WINTER, WALLACE C.
WOOLLEY, CLARENCE M.
WRIGLEY, WILLIAM, JR.

YATES, DAVID M.

DECEASED 1925

ALDIS, OWEN F.
 BANCROFT, EDGAR A.
 BARRELL, FINLEY
 BECKER, A. G.
 BRIDGE, NORMAN
 DEERING, JAMES

FERNALD, GUSTAVUS S.
 HOLLIS, WILLIAM D.
 HULBURD, CHARLES H.
 LAWSON, VICTOR F.
 PAM, MAX
 UPHAM, FREDERICK

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 PUTNAM, JR.
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 ABBOTT, W. R.
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 ACOMB, JESSE P.
 ADAMS, JOSEPH
 ADCOCK, MRS. BESSIE
 ADDLEMAN, SAMUEL W.
 ADLER, MAX
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 ALLBRIGHT, WILLIAM B.
 ALSCHULER, ALFRED S.
 ALSIF, CHARLES H.
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 AUSTRIAN, ALFRED S.

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 BARSON, HENRY B.
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 BAIRD, HARRY K.
 BAIRD, WYLLYS W.
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 BAUM, MERVYN
 BECKER, BENJAMIN F.
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 BENTLEY, CYRUS
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 BIDWELL, CHAS. W.
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 BLAKE, TIFFANY
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 BLATCHFORD, N. H., SR.
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 BLOME, RUDOLPH S.
 BLUM, DAVID
 BLUM, HARRY H.
 BOAL, AYRES
 BODMAN, MRS. LUTHER
 BOERICKE, MRS. ANNA
 BOLTER, JOSEPH C.
 BONDY, BERTHOLD
 BOOMER, DR. PAUL
 BOOTH, ALFRED
 BORLAND, MRS. BRUCE
 BORN, MOSES
 BOSCH, CHARLES



TYPE OF CASE LOANED TO THE SCHOOLS OF CHICAGO BY THE N. W. HARRIS PUBLIC SCHOOL EXTENSION OF
FIELD MUSEUM OF NATURAL HISTORY.

One with actual size.

BOTH, WILLIAM C.
BOWEN, MRS. LOUISE
DE KOVEN
BOWEN, MRS. FRANCES W.
BOYD, THOMAS M.
BOYDEN, MISS ELLEN WEBB
BOYDEN, MISS ROSALIE S.
BOYDEN, MRS.
WILLIAM C., JR.
BOYNTON, MRS. C. T.
BOYNTON, FREDERICK P.
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BRASSERT, HERMAN A.
BRAUN, MRS. MARTHA E.
BREMNER, MRS. DAVID F.
BRENNAN, BERNARD G.
BRIDGE, GEORGE S.
BRIGHAM, MISS FLORENCE M.
BROCK, A. J.
BROOME, THORNHILL
BROSS, MRS. MASON
BROWN, A. W.
BROWN, A. WILDER
BROWN, BENJAMIN R.
BROWN, CHARLES E.
BROWN, CHRISTY
BROWN, MRS. GEORGE DEWES
BROWN, DR. EDWARD M.
BROWNE, ALDIS J.
BRUCKNER, WILLIAM T.
BRUGMAN, JOHN J.
BRUNDAGE, AVERY
BRYANT, JOHN J., JR.
BUCK, GUY R.
BUCK, NELSON LEROY
BUDD, BRITTON I.
BUDLONG, JOSEPH J.
BUFFINGTON, MRS.
MARGARET A.
BULLOCK, CARL C.
BURLY, CLARENCE A.
BURNHAM, MRS. E.
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BUSBY, LEONARD A.
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BUSHNELL, CHARLES E.
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BUTLER, PAUL
BUTLER, RUSH C.
BUTZ, ROBERT T.
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CAPPS, DR. JOSEPH A.
CARON, O. J.
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CARPENTER, GEORGE S.
CARPENTER, HUBBAED
CARPENTER, MISS
ROSALIE S.
CARQUEVILLE, MRS. A. R.
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CARR, GEORGE R.
CARR, WALTER S.
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CLOUGH, WILLIAM H.
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COONLEY, JOHN STUART, JR.
COONLEY, PRENTISS L.
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CORLEY, F. D.
CORMACK, CHARLES V.
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COX, JAMES C.
COX, MRS. RENSSELAER W.

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 CROMER, CLARENCE E.
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 DAVIS, DR. CARL
 DAVIS, FRED M.
 DAVIS, JAMES
 DAVIS, JAMES C.
 DAVIS, DR. NATHAN III
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 DE LEE, DR. JOSEPH B.
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 CHARLES W.
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 DENNEHY, THOMAS C.
 DENNIS, CHARLES H.
 DEUTSCH, JOSEPH
 DEUTSCH, SAMUEL
 DE VRIES, DAVID
 DE VRIES, PETER
 DE WOLF, WALLACE L.
 DICK, ALBERT B., JR.
 DIXON, GEORGE W.
 DIXON, HOMER L.
 DIXON, WILLIAM WARREN
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 DOERING, OTTO C.
 DOLE, ARTHUR, SR.
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 DONOHUE, EDGAR T.
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 DULANY, GEORGE W., JR.
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 DUNHAM, MISS LUCY BELLE
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 DUPEL, MRS. F. KENNETT

DURAND, SCOTT S.
 DURBIN, FLETCHER M.

 EASTMAN, ROBERT M.
 ECKSTEIN, H. G., SR.
 ECKSTEIN, LOUIS
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 EDDY, THOMAS H.
 EDWARDS, MISS EDITH E.
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 EISENDRATH, ROBERT M.
 EISENDRATH, W. N.
 ELCOCK, EDWARD G.
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 EUSTICE, ALFRED L.
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 EVANS, EVAN A.

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 FAHNEY, E. H.
 FAITHORN, WALTER E.
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 FARR, NEWTON CAMP
 FARREL, B. J.
 FAULKNER, MISS
 ELIZABETH
 FAY, MISS AGNES M.
 FELIX, BENJAMIN B.
 FELLOWS, W. K.
 FENTRESS, CALVIN
 FERGUSON, CHARLES W.
 FERNALD, CHARLES
 PETZER, WADE
 FILEK, AUGUST
 FINN, JOSEPH M.
 FLORSHEIM, MILTON S.
 FOLEY, REV. WILLIAM M.
 FOREMAN, EDWIN G., JR.
 FOREMAN, OSCAR G.
 FORESMAN, MRS. W. COATES

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FREUND, CHARLES E.
FREUND, I. H.
FRIDSTEIN, MEYER
FRIEDLANDER, JACOB
FRIEDMAN, OSCAR J.
FRY, HENRY T.
FULLER, JUDSON M.
FULLER, LEROY W.
FURST, EDUARD A.

GABRIEL, CHARLES
GALL, HARRY T.
GALLAGHER, VINCENT G.
GALLUP, ROCKWELL
GALVIN, WM. A.
GARDNER, PAUL E.
GARDNER, ROBERT A.
GARNER, HARRY J.
GARY, FRED ELBERT
GATELY, RALPH M.
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GATZERT, AUGUST
GAYLORD, DUANE W.
GETZOFF, E. B.
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GILES, CARL C.
GILLSON, LOUIS K.
GILLMAN, MORRIS
GINTHER, MISS MINNIE C.
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GOEDKE, CHAS. F.
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GREENE, CHARLES F.
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GREY, HOWARD G.
GREY, WALTER CLARK
GRIFFITH, ENOCH L.
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GUENZEL, LOUIS
GULBRANSEN, AXEL G.
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HAMLIN, PAUL D.
HAMMITT, MISS FRANCES M.
HANSEN, JACOB W.
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HARDIN, JOHN H.
HARDING, GEORGE F.
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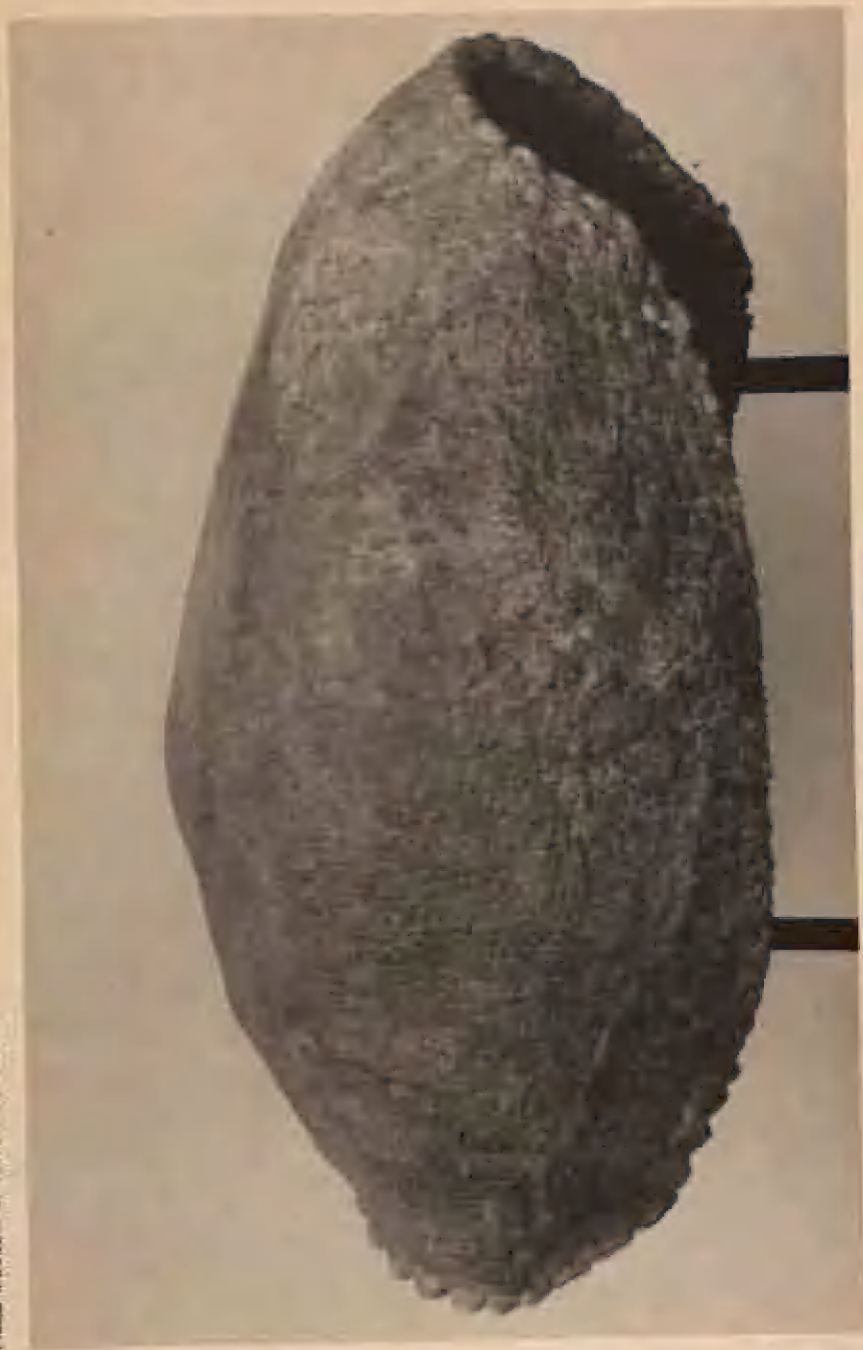
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 GRAMM, DR. CARL T.
 GRANT, ALEXANDER R.
 GRAPPERHAUS, FRED W.
 GRAVER, PHILIP S.
 GRAVES, WILLIAM C.
 GRAYDON, CHARLES E.
 GREAR, W. S.
 GREBY, JOSEPH F.
 GREEN, EDWARD A.
 GREEN, JOHN H.
 GREEN, ROBERT D.
 GREEN, SAMUEL
 GREENGARD, MAX
 GREGENSEN, MISS HELGA
 GREGORY, CLIFFORD V.
 GREIN, JOSEPH
 GREINER, CLARENCE A.
 GRIFFIN, BENNETT
 GRIFFIN, NICHOLAS M.
 GRIFFITH, WILLIAM C.
 GRICAITIS, PIUS
 GRIMM, W. H.
 GROEBE, LOUIS G.
 GROENWALD, FLORIAN A.
 GROMMES, JOHN B.
 GROOME, RICHARD L.
 GROSSBERG, CHARLES
 GROSS, DR. HENRY R.
 GROSSFELD, MISS ROSE
 GRUENFELD, ADOLPH J.
 GRUND, HARRY T.
 GUGGENHEIM, S.
 GUILLIANS, JOHN R.
 GUMBINER, ROBERT
 GUNKEL, GEORGE F.
 GUNN, W. C.
 GUSTAVSON, VICTOR
 GUSTIN, LEWIS V.
 GUTHMAN, MISS BERTHA
 GUTHRIE, MISS MARY G.
 GUTMANN, BERTHOLD
 GUTOWSKI, WILLIAM A.
 GUY, WALTER W.
 GUYTON, C. ERNEST
 GYBERSON, MISS INDIANA
 HAAS, GEORGE H. J.
 HAERTHER, WILLIAM W.
 HAGAN, THOMAS F.
 HAGNER, FRED L.
 HAHN, WILLIAM L.
 HAIR, JOHN V.
 HAIR, T. R.
 HAJEK, HENRY F.
 HAKANSON, MRS.
 BERTHA W.
 HALBERT, WARD K.
 HALL, ARTHUR B.
 HALL, CHARLES R.
 HALL, EDWARD B.
 HALL, HENRY C.
 HALL, WILLIAM B.
 HALL, WILLIAM W.
 HALLENBECK, CHARLES E.
 HAMBLETON, C. J.
 HAMBLETON, MRS. EARL L.
 HAMILL, ROBERT W.
 HAMILTON, HUGO A.
 HAMILTON, ROBERT J.
 HAMILTON, WALTER G.
 HAMMEL, GEORGE E.
 HAMMER, ADOLPH G.
 HAMMEN, HANS H.
 HAMMER, THOMAS H.
 HAMMERS, M. J.
 HAMMERBERG, MISS EVA M.

HAMMOND, ROY E.
HANCE, PAUL W.
HANLEY, MRS. H. L.
HANLY, CLARENCE P.
HANNA, FRANCIS D.
HANNAH, ALEXANDER W.
HANNAN, MISS
 ELIZABETH Q.
HANSEN, MISS ALMA C.
HANSON, MARTIN J.
HARDENBROOK, BURT C. V.
HARDING, S. LAWRENCE
HARKNESS, LAUNCELOT A.
HARMON, HUBERT R.
HARMON, JOHN H.
HARNER, GEORGE W.
HARRIMAN, FRANK B.
HARRIMAN, MRS. KARL E.
HARRIS, DAVID J.
HARRIS, EWART
HARRIS, GORDON L.
HARRIS, J. MAX
HARRIS, WALLACE R.
HARRIS, WILLIAM L.
HARRISON, HARRY P.
HARRISON, JAMES D.
HARROLD, JAMES P.
HART, MRS. HELENA
HART, HENRY D.
HART, LOUIS E.
HART, WILLIAM N.
HARTIGAN, CLAIRE
HARTMANN, HENRY, SR.
HARTWIG, OTTO J.
HARVEY, BYRON S.
HARWOOD, FREDERICK
HARWOOD, THOMAS W.
HASSETT, FRANK L.
HASTINGS, EDMUND A.
HATCH, FRANK M.
HAUGAN, MISS ALICE
HAUGHEY, JAMES M.
HAUSER, J. C.
HAUSMANN, FRANK W.
HAUSSE, RICHARD H.
HAWKINS, FRANK P.
HAWKINS, M. L.
HAWKINSON, J. T.
HAWLEY, ALBERT P.
HAWTHORNE, VAUGHN R.
HAWTIN, WELLS W.
HEALY, JOHN J.
HEATON, HARRY E.
HEEL, OSCAR
HECHLER, VALENTINE

HECK, JOHN
HECKENDORF, R. A.
HECKINGER, WM. J.
HECTOR, WILLIAM S.
HEDBERG, VICTOR E.
HEDGES, FLEMING D.
HEDGES, DR. ROBERT N.
HEEREMA, GERRIT
HEG, ERNEST, SR.
HEIBERG, S. JOHN
HEIDEL, DR. CECIL T.
HEIDLER, FRANK J.
HEIFETZ, SAMUEL
HEINEKE, CARL
HEINEMANN, EARL
HEINEMANN, JOHN B.
HEINFELDEN, CURT H. G.
HEINTZ, L. HERMAN
HEISE, WILLIAM F.
HELLER, BRUNO F.
HEMPSTEAD, JOSEPH L.
HENDRICKSON, MAGNUS
HENNING, FRED C.
HENRICKSON, OLOF B.
HENRY, C. DUFF
HENRY, MISS CAMILLE B.
HENRY, CHARLES W.
HENRY, CLAUDE D.
HENRY, H. B.
HENSCHEN, H. PETER
HENSEL, HERMAN E.
HEPBURN, DAVID D.
HERMANN, WILLIAM C.
HERROD, HERBERT E.
HERTEL, HUGO S.
HERTZBERG, EDWARD
HERZMAN, DR. MORRIS H.
HESS, JOHN L.
HESS, SOL H.
HESSERT, GUSTAV
HESSERT, DR. WILLIAM
HETTRICK, WILLIAM J.
HEUMOS, ALOIS
HEYMAN, EMANUEL H.
HEYMANN, L. H.
HEYN, WILLIAM P.
HIBBARD, FREDERICK C.
HIBSHMAN, ROY S.
HICKLIN, JOHN W.
HIGBIE, N. BRADLEY
HIGH, SHIRLEY T.
HILDEBRAND, EUGENE
HILDEBRAND, GRANT M.
HILGENDORF, GEORGE H.
HILL, FREDERICK

HILL, JOHN
 HILL, WILLIAM H.
 HILLIS, DR. DAVID
 HILLYER, DWIGHT E.
 HILTON, HENRY H.
 HIMAN, CHARLES
 HINDMAN, ARTHUR S.
 HINDS, JOSEPH B.
 HINN, DR. GEORGE J.
 HIRD, FREDERIC H.
 HIRSCH, HENRY H.
 HIRSCH, JACKSON H.
 HIRSCHFELD, DR. S.
 HISCOX, MORTON
 HITCHCOCK, R. M.
 HITE, HARRY A.
 HODGDON, WILLIAM
 HODGE, THOMAS P.
 HODGES, LOUIS A.
 HODSON, WILLIAM
 HOEFER, ERNEST
 HOELSCHER, HERMAN M.
 HOFFMAN, JACOB
 HOFFSTADT, DR. JOHN P.
 HOGG, HARRY H.
 HOLABIRD, JOHN A.
 HOLDEN, CHARLES R.
 HOLLAND, DR. WILLIAM E.
 HOLLMEYER, JOHN G.
 HOLLOWAY, OWEN B.
 HOLLOWELL, R. D. T.
 HOLM, GOTTFRIED
 HOLMAN, ALF. L.
 HOLMAN, EDWARD
 HOLMES, DR. BAYARD
 HOLMGREN, ELMER N.
 HOLT, C. McPHERSON
 HOLT, JAMES A.
 HONNOLD, FRED C.
 HOOGE, DR. LUDWIG F.
 HOOK, ARTHUR S.
 HOOT, MISS EMILY M.
 HOPKINS, MRS. BLANCHE B.
 HOPKINS, WALTER D.
 HORN, ALBIN O.
 HORNER, HENRY
 HORNSTEIN, LEON
 HORSEFALL, OLIN L.
 HORST, CURT A.
 HORSTING, WILLIAM F.
 HORWEEN, RALPH
 HORWICH, PHILIP
 HOSFORD, WILLIAM R.
 HOSKINS, EDMUND F.
 HOUGHTELING, MISS H. P.

HOUGHTELING, JAMES L.
 HOUK, WILLIAM D.
 HOWARD, EUGENE A.
 HOWE, MRS. FANNY J.
 HOWELL, ALBERT S.
 HOWES, HENRY W.
 HOYT, DR. D. C.
 HOYT, WILLIAM M. II
 HRYNIEWICKI, DR. STEFAN
 HUBBARD, E. J.
 HUBBARD, WILLIAM C.
 HUBBELL, WILLIAM J.
 HUEBSCH, MRS. HELEN
 HUGHES, HUBERT EARL
 HUGHES, JOHN J.
 HULBERT, MRS. CHAS.
 PRATT
 HULL, IRVING W.
 HULL, ROBERT W.
 HULLHORST, DR. PAUL
 HUMISTON, DR. CHARLES E.
 HUNGERFORD, LOUIS S.
 HUNSCH, FREDERICK
 HUNT, W. PRESCOTT, JR.
 HURD, HARRY B.
 HURD, MAX H.
 HURLEY, EDWARD N., JR.
 HUTCHISON, MRS. C. L.

ILIFF, GEORGE F.
 INGRAM, HAROLD S.
 INGRAM, MISS LOTTIE N.
 INLANDER, SAMUEL
 INSULL, MARTIN J.
 IRISH, DR. HENRY E.
 IRWIN, A. C.
 ISMOND, THOMAS A.
 IVERSON, RALPH H.
 IWERT, WILLIAM C.

JABUREK, RICHARD
 JACKSON, DAVID H.
 JACKSON, RAPHAEL
 JACKSON, MISS RUBY A.
 JACKSON, WILLIAM F.
 JACOBS, JULIUS
 JACOBS, NATHAN
 JACOBSON, RAPHAEL
 JACOBSON, WILLIAM
 JAEGER, EDWARD W.
 JAEGERMANN, WILLIAM A.
 JAENICKEN, FREDERICK H.
 JAMES, RAYMOND H.
 JAMES, DR. T. FRANKLIN
 JAMESON, CLARENCE W.

JAMISON, LEROY D.
JAMPOLIS, MRS. MARK
JANATA, LOUIS J.
JAQUES, LOUIS T.
JARCHOW, ALFRED W.
JARCHOW, CHARLES C.
JAREMA, ALEXANDER L.
JARVIS, WILLIAM B., SR.
JEFFRIES, DR. DANIEL W.
JEHN, REV. ERNEST G.
JENES, PIERRE G.
JENNISCHE, LUDWIG
JENSEN, CARL E.
JENSEN, CHRIST A.
JENSEN, GORM
JERNBERG, C. EDGAR
JERNBERG, CARL L.
JIRSA, DR. OTTO J.
JOHANIGMAN, STERLING E.
JOHNSEN, CHARLES
JOHNSON, ALFRED W.
JOHNSON, AUGUST
JOHNSON, BERT W.
JOHNSON, CHARLES E.
JOHNSON, FRED A.
JOHNSON, HARRY C.
JOHNSON, HENRY G.
JOHNSON, JAMES C.
JOHNSON, JULIUS G.
JOHNSON, MARTIN A.
JOHNSON, NELS E.
JOHNSON, NELS J.
JOHNSON, P. ROBERT
JOHNSON, PHILIP C.
JOHNSON, RAY T.
JOHNSON, ULYSSES G.
JOHNSON, VERNON
JOHNSON, VICTOR M.
JOHNSTON, BERNARD F.
JOHNSTON, DAVID B.
JOHNSTON, IRA B.
JOHNSTON, SAMUEL P.
JOHNSTONE, BALFOUR
JOHNSTONE, GEORGE A.
JONAS, SOL T.
JONES, CHARLES J.
JONES, MISS EDNA E.
JONES, MRS. HOMER D.
JONES, JAMES B.
JONES, JOHN S.
JONES, L. BEERS
JONES, DR. MARGARET M.
JOSEPH, ARTHUR W.
JOSEPH, MORRIS
JOY, JAMES A.

JUDAH, MRS. NOBLE BRANDON
JULIUS, LEONARD H.
JUNKER, RICHARD A.
JUNKUNC, STEPHEN
JUST, MRS. CHARLES L.

KACHUDAS, CHRIS A.
KAHMANN, KARL W.
KAHN, I. W.
KANAVEL, DR. ALLEN B.
KANN, MAX M.
KANNALLY, MICHAEL V.
KAPSA, LADISLAV A.
KARALIUS, DR. A. J.
KARPEN, SOL
KASEHAGEN, FRED W.
KASSNER, CONRAD
KELLOGG, JAMES G.
KELLY, JOSEPH J.
KEPLINGER, W. A.
KERWIN, EDWIN M.
KIMBALL, MRS. LOUISE L.
KIMBARK, JOHN R.
KING, DR. C. BRUCE
KING, FRANK J.
KING, FRANK O.
KING, JOHN ANDREWS
KINGSLEY, REV. THERON M.
KINGSTON, MRS. ROSE L.
KINNEY, CLARENCE M.
KINNEY, DR. WILLIAM B.
KINSELLA, DR. L. C.
KINSEY, LOUIS A.
KINSEY, ROBERT S.
KINTZELL, RICHARD
KIPP, CARL P.
KIRBY, JOHN R.
KIRCHER, REV. JULIUS
KISTEL, JOHN H.
KITCHELL, HOWELL W.
KIXMILLER, MRS. WILLIAM
KLAFS, ERNEST C.
KLAPMAN, MORRIS
KLEIN, ABRAHAM A.
KLEIN, ARTHUR F.
KLEIN, DR. CARL
KLEIN, DR. DAVID
KLEIN, MRS. HENRY A.
KLEIN, MICHAEL B.
KLEIN, PETER
KLEIN, RICHARD R.
KLEIN, T. HENRY
KLEINHANS, DR. JOSEPH B.
KLEINMAN, ALEXANDER
KLENHA, JOSEPH Z.

- KLINE, SOL
 KNAPP, CLIFFORD J.
 KNAPP, GEORGE L.
 KNAPP, THOMAS
 KNIGHT, CHARLES S.
 KNIGHT, STANLEY M.
 KNODE, OLIVER M.
 KNOWLES, WILLIAM V.
 KNUDSEN, HAROLD B.
 KOCH, PAUL W.
 KOHL, PETER J.
 KOHN, EMIL
 KOHN, OSCAR
 KOHOUT, JOSEPH, JR.
 KOLLBAUM, MISS DORA H.
 KOLSTAD, OSIN T.
 KONOPA, JOHN S.
 KONSBERG, ALVIN V.
 KOONE, MRS. LAURA E.
 KOFF, CHARLES W.
 KOFF, WILLIAM P.
 KORINEK, GEORGE R.
 KORN, MOSES
 KORSHAK, MAURICE J.
 KORTEN, MRS. WILLIAM O.
 KOSTECKA, JOHN
 KOTIN, GEORGE N.
 KOVAC, STEFAN
 KOVOLOFF, DANIEL
 KOZICKYNSKI, DR. LUCIAN
 KOZLOWSKI, VINCENT F.
 KRACKE, ARTHUR M.
 KRAEMER, OTTO C.
 KRAFT, DR. OSCAR H.
 KRAFTHEFER, JAMES M.
 KRAJEWSKI, ADAM R.
 KRAKOW, OSCAR
 KRAMER, CLETUS F.
 KRANSTOVER, ALBERT H.
 KRATOSKA, FRANK J.
 KRAUSMAN, ARTHUR
 KREIN, FRANK J.
 KRENSKY, A. MORRIS
 KRIEBEL, WARREN W.
 KROESER, W. F.
 KRONE, PAUL
 KROPP, CHARLES A.
 KRUEGER, JOSEPH
 KRUGER, RICHARD O.
 KRUFNICK, IRA
 KUDNER, ARTHUR H.
 KUEHN, OSWALD L.
 KUGLER, BENJAMIN
 KUH, DR. SIDNEY
 KUHLMANN, CLARENCE F.
 KUHN, JOSEPH H.
 KULPAK, STEPHEN A.
 KUNDSEN, HAROLD B.
 KUNKA, BERNARD J.
 KUNTZ, REV. LAWRENCE
 KUNTZENDORF, CHARLES A.
 KURK, FRED W.
 KURZ, OSCAR A.
 KUSSEL, GABRIEL
 LACH, LOUIS
 LACY, HERMAN C.
 LAHANN, HERMAN C.
 LAKE, EDWARD
 LAMB, FRANK H.
 LAMONT, JOHN A.
 LAMPERT, MRS. LYDIA
 LANE, MISS ABBY E.
 LANG, CHARLES E.
 LANGDON, BUEL A.
 LANGERT, ABRAHAM M.
 LANGILLE, WILBUR F.
 LANGWORTHY, BENJAMIN F.
 LANTUS, JAMES C.
 LANZINGER, MRS. JOHN M.
 LARKIN, CHARLES M.
 LARSEN, CHARLES
 LARSEN, GUSTAVE R.
 LARSEN, HARVEY E.
 LARSON, BROR O.
 LARSON, EMIL M.
 LARSON, FRANK A.
 LARSON, GUSTAF E.
 LARSON, LAURENCE J.
 LARSON, SIMON F.
 LATHAM, CARL RAY
 LATHROP, FREDERICK A.
 LAVIDGE, ARTHUR W.
 LAWES, CHARLES A.
 LAWLER, JOSEPH B.
 LAWRENCE, B. E.
 LEACH, GEORGE T.
 LEE, J. OWEN
 LEMON, HARRY C.
 LEHMPUHL, HERMAN F.
 LEIGH, EDWARD B.
 LEIGHT, EDWARD A.
 LEIGHT, MRS. EDWARD A.
 LELIVELT, JOSEPH J.
 LE SAGE, JOHN J.
 LESTER, ALBERT G.
 LESTER, FRANK H.
 LEVAN, REV. THOMAS F.
 LEVEY, CLARENCE J.
 LEVINE, GEORGE

LEVINSON, DR. BENJAMIN
LEVINSON, SALMON O.
LEVIS, W. WALTER
LEVITAN, LOUIS
LEVITZ, NATHAN
LEVITT, NATHAN
LEVY, HARRY H.
LEWIS, J. HENRY
LIBBERTON, DR. RALPH E.
LICHTENSTEIN, WALTER
LINCOLN, ROBERT T.
LINDHEIMER, JACOB
LINDHEIMER, S. W.
LINEBERRY, G. L.
LININGER, WILLIAM H.
LINKLATER, J. E.
LINKMAN, LOUIS B.
LINN, ERICK N.
LINSLEY, WILLIS H.
LIPCOWITZ, ISADOR
LIPKIN, MAURICE S.
LIPMAN, ABRAHAM
LIPPERT, ALOYSIUS C.
LIPSEY, WILLIAM J.
LIPSHULCH, JEHIEL
LISS, SAMUEL
LISTER, HAROLD R.
LISTER, DR. WILLIAM W.
LITHGOW, CHARLES H.
LITTELL, C. GUY
LITTLE, CHARLES G.
LITTLE, GEORGE
LITTLE, JOHN L.
LITZKOW, FRED W.
LLEWELLYN, ARTHUR J.
LLOYD, A. E.
LLOYD, MRS. GRACE C.
LOBDELL, MRS. EDWIN L.
LOBDELL, HARRY H.
LOBELL, GEORGE M.
LOCHNER, FREDERICK H.
LOCKE, GEORGE D.
LOEB, ARTHUR A.
LOEB, HAMILTON
LOEB, DR. LUDWIG M.
LOEB, MAURICE
LOEHK, KARL C.
LOEWING, MAX
LOEWENHERZ, EMANUEL
LOEWENSTEIN, NATHAN
LOEWY, WILLIAM
LOGAN, BERNARD
LOGAN, FRANK G.
LOMAX, WILLIAM L.
LONDON, HARRY

LONG, DR. ESMOND R.
LONG, WILLIAM H.
LONGHI, EMILIO
LOOMIS, W. ANDREW
LOOMIS, MISS HELEN A.
LORD, ROBERT O.
LORENZEN, HENRY
LOTT, GUSTAV R.
LOTT, JAMES N.
LOTT, WILLIAM H.
LOUCKS, CHARLES O.
LOUIS, ISADORE
LOVE, CHASE W.
LOVELY, MISS CHARLOTTE G.
LOW, JOHN M.
LOW, WILLARD W.
LOWY, RUDOLPH
LOZINS, BERT
LOZO, JOSEPH P.
LUCAS, DR. A. L.
LUDOLPH, WILBUR M.
LUDWIG, WILLIAM F.
LUND, HJALMAR C. R.
LUTZOW, FRED H.
LYTLE, CLINTON W.

MAC RAE, ALBERT
MCALLISTER, M. HALL
MCARTHUR, DR. LEWIS L.
MCBEATH, HARRY F.
McCANN, ROBERT L.
MC CARTHY, REV. FATHER
GEO. T.
MCCAULEY, MRS. THOMAS N.
MC CONNELL, JOHN L.
MC CONNELL, JOHN W.
MCFADDEN, EVERETT R.
MCGARRY, JOHN A.
MCGOORTHY, J. P.
MCGOUGH, S. P.
MCKEE, MRS. WILLIAM L.
MC LAURY, MRS. C. W.
MCMILLAN, DAVID E.
MC NERNY, MATHEW F.
MC NICHOLS, JOHN V.
MADDOCK, MISS ALICE E.
MAGAN, MISS JANE A.
MAGIE, MRS. FRANK OGDEN
MAGILL, HENRY P.
MAGNUS, EDWARD
MANN, WILLIAM H.
MANNING, MISS EMMA
MANSON, WILLIAM
MARSH, JOHN MCWILLIAMS

MARSHALL, RAPHAEL H.
 MARTIN, MELLEN C.
 MARTIN, Z. E.
 MASON, GEORGE, JR.
 MASSMANN, FRED H.
 MATTHEWS, FRANCIS E.
 MAYNARD, MRS. ADA E.
 MEAD, HENRY C. A.
 MEDSKER, DR. ORA L.
 MEER, C.
 MESKER, ARTHUR
 MERRILL, MRS. J. J.
 MERRILL, WILLIAM W.
 MEYER, ABRAHAM W.
 MEYER, SAM R.
 MILLER, CHARLES B.
 MILLER, MRS. CHARLES P.
 MITCHELL, L. A.
 MOENG, EDWARD D.
 MONTAGUE, ORLO O.
 MONTGOMERY, MRS. F. H.
 MONTGOMERY, FRED. D.
 MOONEY, WILLIAM H.
 MOORE, FREDERICK W.
 MOORE, NATHAN G.
 MORGAN, CLARENCE
 MORRIS, EUGENE C.
 MORSE, MRS. CHARLES F.
 MORSEMAN, JOSEPH J.
 MORTON, WILLIAM MORRIS
 MOSES, HOWARD
 MULDOON, JOHN A.
 MULLIKEN, A. H.
 MULLIKEN, JOHN H.
 MUNGER, GEORGE E.
 MURPHY, WALTER AUSTIN

NASH, JOHN S.
 NASH, PATRICK A.
 NELSON, E. A.
 NESBIT, WILBUR D.
 NESBIT, WILLIAM
 NICHOLS, EDWIN G.
 NICHOLS, WARREN
 NICKERSON, J. F.
 NORCROSS, FREDERIC F.
 NORTON, JOHN W.

O'CONNOR, JAMES R.
 OLLIER, VALENTINE
 O'MALLEY, DR. J. G.
 OMO, DON L.
 ORNDORFF, DR. BENJAMIN H.
 OSSENDORFF, DR. K. W.
 OTTE, HUGO E.

PACKARD, DR. ROLLO K.
 PACKER, CHARLES SWASEY
 PADDOCK, DR. CHARLES E.
 PALMER, PROF. CLAUDE
 IRWIN
 PALMER, PERCIVAL B.
 PARKER, GEORGE S.
 PARKER, NORMAN S.
 PARTRIDGE, C. W.
 PAULDING, JOHN
 PAULEY, CLARENCE O.
 PAULSEN, DR. J. W.
 PEACOCK, CHARLES A.
 PEARL, ALLEN S.
 PECK, MRS. CHARLES G.
 PENNINGTON, FRANK B.
 PERLSTEIN, BENJAMIN
 PERRY, DR. ETHEL
 PETERSEN, JURGEN
 PETERSON, ALBERT
 PHILIPSON, ISIDOR
 PICK, ALBERT, JR.
 PICKARD, MRS. W. A.
 PICKELL, J. RALPH
 PICKRELL, HARVEY
 PINCOFFS, MAURICE
 PLACE, P. E.
 PLAMONDON, CHARLES A.
 PLATKA, FRANK T.
 POND, ALLEN B.
 POWELL, MISS NELLIE
 PRATT, CHARLES A.
 PRINCE, LEONARD M.
 PROPPER, WILLIAM F.
 PROSSER, MRS. J. G.
 PROTHOROE, DANIEL
 PRUYN, WILLIAM HENRY, JR.
 PULVER, HENRI PIERRE

QUADOW, NATHAN L.
 QUINLAN, DR. WILLIAM W.

RABER, FRANKLIN
 RAFF, WILLIAM J., SR.
 RANDALL, REV. EDWIN J.
 RANDLE, GUY D.
 RAPAPORT, MORRIS W.
 RAYHORN, CHARLES
 REACH, BENJAMIN
 REED, EARL HOWELL, JR.
 REED, MRS. MARY L.
 REED, RUFUS M.
 REEVE, FREDERICK E.
 REGENSBURG, JAMES
 REILLY, JOHN R.



FRONT OF MAORI COUNCIL-HOUSE, NEW ZEALAND.

Twenty feet wide. Fourteen feet high.

REQUA, WILLIAM B.
RICE, OTTO M.
RICHARDS, H. A.
RICHARDS, MARCUS
RICHTER, DR. H. M.
RIGALI, JOHN E.
RIPLEY, MRS. E. P.
RITTENHOUSE, MRS. MOSES F.
ROBERTS, JESSE E.
ROCKWELL, HAROLD H.
RODEN, CARL B.
RODGERS, DR. DAVID C.
ROGERS, MISS IRENE F.
ROGERS, EDWARD J.
ROLFE, GERALD A.
ROLLO, EGBERT
RORABACH, GEORGE E.
ROSENBAUM, EDWIN S.
ROSENBAUM, MRS. EDWIN S.
ROSENFELD, MRS. MAURICE
ROSENFELD, M. J.
ROSENWALD, MISS MAE O.
ROSS, DR. COLIN K.
ROTHSCHILD, MRS. HATTIE
RUD, DR. ANTHONY
RUDOLPH, MISS BERTHA
RUETTINGER, J. G.
RUSSELL, MRS. MILDRED A.
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